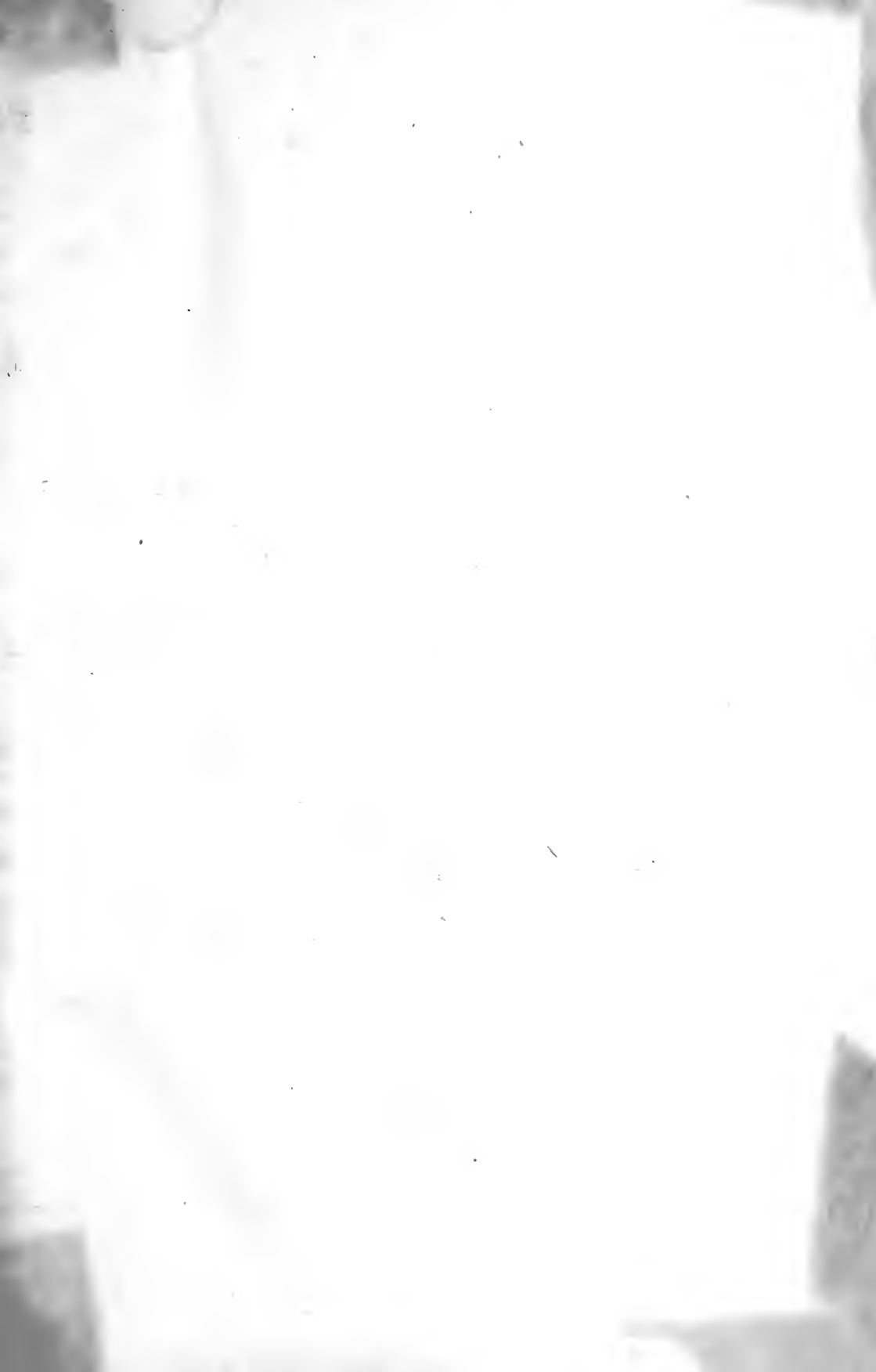




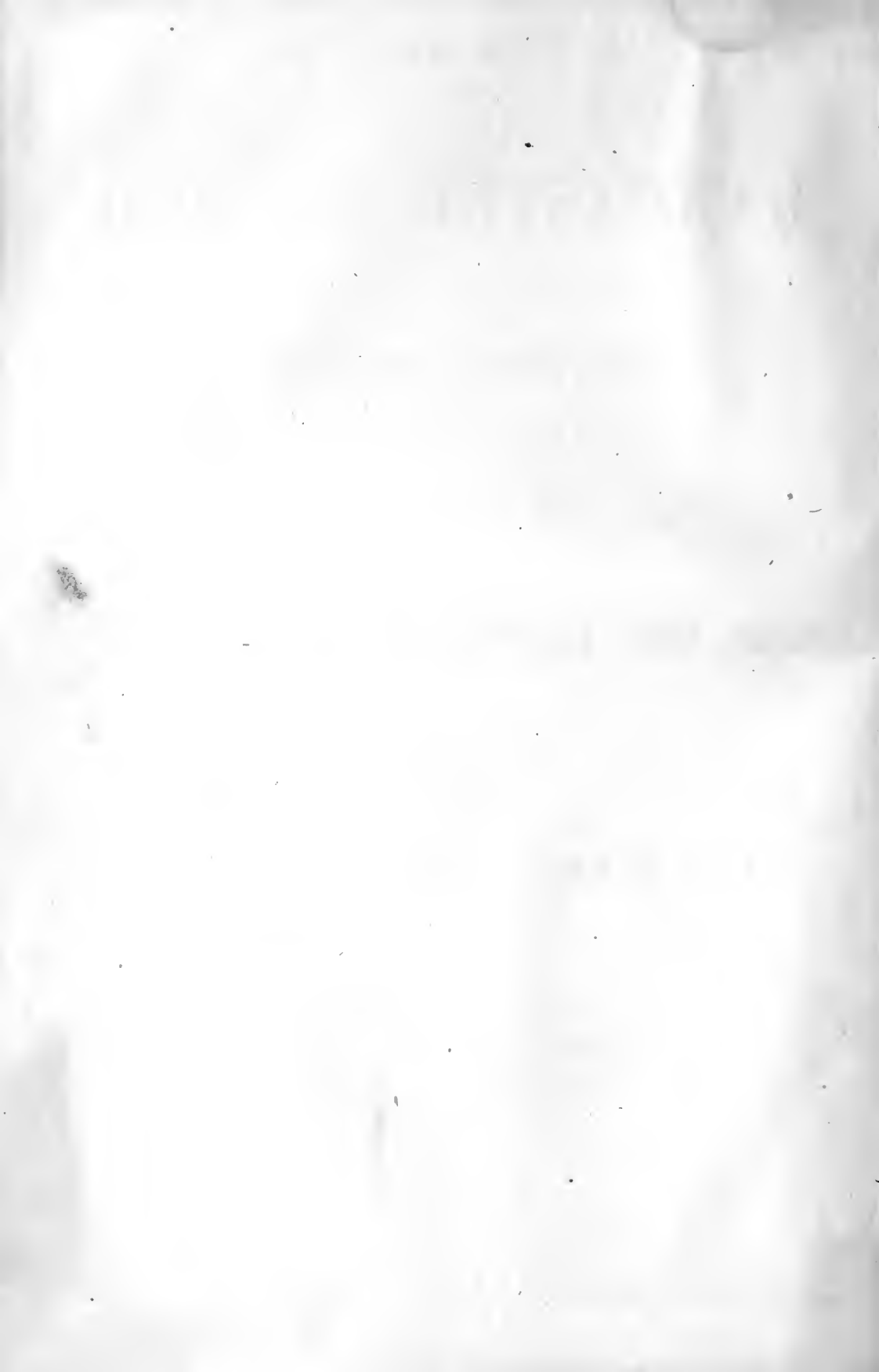
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THE

LANCASTER FARMER,

PUBLISHED MONTHLY

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

TERMS.—ONE DOLLAR PER YEAR IN ADVANCE.

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LANCASTER, PA.:

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# INDEX.

## A.

Advertisements, 189.  
Agriculture a Progressive Science, 8.  
A Veteran Magnolia, 9.  
A Large Tannery, 15.  
A Paper on Fruit Culture, 19.  
Agricultural, 24, 37, 53, 70, 84, 100, 116, 132, 148, 163.  
A List of Varieties of Blackberries, 41.  
American Entomologist, 61.  
A Good Word for the Cat-bird, 76.  
Annual Report of Experimental Farm, 78.  
Act for Protection of Game, 79.  
Ashes for Peas, 80.  
*Aspidiotus Harrisi*, 88.  
An Agricultural Library, 92.  
Answers to Correspondents, 96, 144.  
A Generous Yield, 108.  
Adventitious Buds, 113.  
Alderney Breed of Cattle, 116.  
American Pomological Society, 121.  
Amherst Agricultural College, 122.  
Application of Marl to Fruit Trees, 126.  
Average Age of Animals, 127.  
Agricultural Improvements, 163.  
Agricultural Exhibitions, 168.  
Advice to Working Men, 169.  
About Candles, 171.  
Arts for Home Use, 174.  
American Sumac, 176.  
A Remedy Against Insects, 176.

## B.

Botany, 36, 57, 72, 87, 105, 118, 135, 151, 166.  
Bowers' Complete Manure, 89, 122.  
Bread, 93.  
Bee Culture, 106.  
Bean Weevil, 107.  
Bran for Milch Cows, 110.  
Blackberry Culture, 40, 41.  
Bitter-Weed, 87.  
Butter and Cheese Culture as a Rest for Grain Culture, 181.

## C.

Chestnut Culture, 192.  
Cherries, 189.  
Cutting Grain before Ripe, 5.  
*Clematis Flammula*, 15.  
Correspondence, 27, 42, 88.  
Card the Cows, 32.  
Circulation of the Sap in the Plant, 177.  
Culture of Blackberries, 40.  
Climate, 42.  
Currant Culture, 44.  
Crossing or Hybridizing Wheat, 54.  
Census and Agriculture, 63.  
Care of Sheep, 64.  
Communications, 122, 152.  
Clouds as Indications of the Weather, 128.  
Corn Culture, 133.  
Canada Thistle, 134.  
Cattle Raising, 138.  
Cows for General Use, 141.  
Curious Effects of Pine Trees on Soil, 160.  
Curculios, 73.  
Closing Reflections, 187.  
Creeping Spurge, 160.  
Cure for Glanders, 192.

## D.

Deep Plowing should be Gradually Done, 31.  
Does Farming Pay in Lancaster County? 55.  
Destruction of Insects, 62.  
Destroying Stumps, 64.  
Draught, 95.  
Do the Constellations Influence Vegetation? 117.  
Death of Mrs. Lizzie Engle, 61.  
Dandelion, 72.  
Domestic Receipts, 191.

## E.

Edible Fungi, 4.  
Entomology, 2, 28, 44, 56, 73, 88, 107, 136, 186.  
Extracts, 2, 5, 11, 16, 25, 40, 61, 80, 109, 152.  
Essays, 20, 49, 65, 69, 81, 98, 113, 129, 145, 161.  
Editorials, 29, 46, 58, 89, 107, 138, 152, 160.  
Extirmination of Noxious Insects, 44.  
Extirminating Insects by Fire, 45.

- Evans' Catalogue, 47.  
 Encouraging Thieves, 189.  
 Economy of Birds, 51.  
 English Sparrows, 64.  
 Experimental Farm, 101, 109.  
 Exploded Theories, 117.  
 Eatable Mushrooms, 126.  
 Excerpts from *Ohio Farmer*, 128.  
 Early Goodrich Potato, 133.  
 Effects of Trees on Climate, 144.  
 Early Rose Potato, 192.  
 Farming in Lancaster County, 180.
- F.**
- Feeding Sheep for Manure, 16.  
 Fruit Growers Society, Pa., 16, 168.  
 Ferre, Batchelder & Co's. Catalogue, 47.  
 Fish Culture, 48, 63.  
 Flowers, 55.  
 Fusil Oil, 64.  
 Fertilizers for Strawberries, 80.  
 Fruit Exhibition, 149.  
 Fruit Trees, 184.  
 Fall Planting of Trees, 192.
- G.**
- Grape Culture, 6.  
 Growing Figs in Northern Climate, 42.  
 Gas Lime a Fertilizer and Insect Preventer, 62.  
 Good Tools, 115.  
 Green Manure, 132.  
 Gapes in Chickens, 144.
- H.**
- How to Raise Forest Trees, 8.  
 How to Buy Furs, 15.  
 How I Make Dutch Cheese, 192.  
 Hard Milching Cows, 16.  
 How to Save Girdled Fruit Trees, 16.  
 Horticultural, 26, 39, 55, 85, 102, 134, 149, 164.  
 How to Raise Chester County Hogs, 38.  
 How to Raise Blackberries, 41.  
 How many Acres of Blackberries, 41.  
 Houses for Birds, 45.  
 Hoops Bro. & Thomas' Catalogue, 47.  
 How to Improve Exhausted Lands, 53.  
 How to Prepare Land for Orchards, 55.  
 Hovey's Illustrated Catalogue, 61.  
 Hybridization of Wheat, 70.  
 How to Raise Lima Beans, 86.  
 How to Make the Butter Comc, 92.  
 Horticulture as Old as the Bible, 102.  
 Horticultural Exhibitions, 120.  
 How about Mushrooms? 127.  
 Hay Required for Cows, 160.  
 How Much? 155.  
 Hydraulic Ram, 173.  
 How to Grow Hair, 176.  
 Household Market, 176, 192.
- I.**
- Introductory, 1.  
 Improved Cattle in Lancaster County, 91.
- J.**
- June Strawberry Exhibition, 109.
- K.**
- Kreider's Catalogue, 61.
- L.**
- Letter from California, 27.  
 Look out for Humbugs, 44.  
 Liquid Grafting Wax, 96.  
 LANCASTER FARMER, 96.  
 Leaks on the Farm, 127.  
 Lancaster County Tobacco, 133.  
 Locust-Tree Blight, 136.  
 Lightning Rods, 158.
- M.**
- Miscellaneous. 31, 48, 62, 92, 110, 126, 141, 150, 169.  
 Model Blackberry Bushes, 40.  
 Management of Farm Manure, 63.  
 Mildew, or Rust and its Remedy, 84.  
 Maple-Leaf Gall, 96.  
 Mill Beetle, 137.  
 Manurial Powder of Salt, 160.  
 Mushrooms, 170.  
 Mullien, 135.
- N.**
- Norway Oats, 25.  
 National Pomological Society, 95.  
 Notes on the Culture of Saffron, 106.
- O.**
- Ornithology, 3, 75.  
 Old Maids, 32.  
 Origin of Varieties of Blackberries, 41.  
 Orchards, 64.  
 Observations on Rain, 67.  
 Old Waterman's Journal, 110.
- P.**
- Proceeding of the Agricultural and Horticultural Society, 5, 30, 47, 59, 77, 90, 107, 119, 139, 154, 167, 187.  
 Potatoe Culture, 7.  
 Persian Insect Powder, 11.  
 Phenomena of Rain, 12.  
 Property in Plants, 32.  
 Plums for the Million, 39.  
 Preparing Ground for Blackberries, 40.  
 Price of Blackberries, 41.  
 Planting Grape Eyes, 41.  
 Planting Trees, 42.  
 Pennsylvania Fruit Grower's Society, 58.  
 Plastic State Roofing, 61.  
 Preservation of Fruit Trees, 64.

Poor Land—Poor Farmers, 64.  
 Pear Culture, 69.  
 Philadelphia Butter, 183.  
 Plant a Few Raspberries, 92.  
 Potatoes in Hills, 95.  
 Peach Aphis, 96.  
 Pear-shaped Coccoon, 96.  
 Peach Crop of Maryland, 101.  
 Pruning Trees, 104.  
 Pea-bugs and Bean-bugs, 107.  
 Plums, 127.  
 Potatoes, 128.  
 Potatoes and their Winter Management, 190.  
 Plowing Orchards, 164.  
 Poultry Manure, 168.  
 Preserving Fruit, 173.  
 Profitable Reading, 141.  
 Plant more Trees, 121.  
 Poke Weed, 118.

## R.

Rotation of Crops, 24.  
 Rust on Dinner Knives, 32.  
 Robert Fulton—Historical Novel, 60.  
 Roots as Organs of Vegetation, 81.  
 Raising Locust Trees, 134.  
 Review of Markets, 144, 176.  
 Report of Committee on Apples, 149.  
 Report of Committee on Grapes, 149.  
 Report of Committee on Pears, 150.  
 Report of Committee on Peaches, 150.  
 Report of Committee on Vegetables, &c., 151.  
 Raising Forest Trees, 164.  
 Receipts for Preserving Fruits, 173.  
 Raising Celery, 175.  
 Rag Weed, 87.

## S.

State Agricultural College, 48.  
 Soldier Beetles, 56.  
 Seasonable Pruning, 62.  
 Snout Beetles, 73.  
 Selection of Seed Corn, 94.  
 Silk Coccoon, 96.  
 Smut, 102.  
 Saffron Culture, 109.  
 Save the Birds, 122.  
 Scraping and Washing Trees, 128.  
 Soot, a Powerful Fertilizer, 128.  
 Small Fruit Culture, 141.  
 Sparrows, 143.  
 Spruce Up, 160.  
 Storing Celery, 191.  
 Scripture Farming and Horticulture, 165.  
 Scientific and Mechanical, 15.  
 Staking Fruit Trees, 128.  
 St. John's Wort, 57.  
 Slovenly Farming, 101.

## T.

To the Public, 1.  
 The Culture of Fruit, 10.  
 Tiger Beetles, 28.  
 The Culture of the Peach, 26.  
 The Duty of Writing, 30.  
 To Cleanse Seed Wheat, 32.  
 The Cellular Tissue of Plants, 33.  
 The Culture of Wheat, and its Soil, 34.  
 The Cell in the Process of Germination, 49.  
 The Robin, 51.  
 To Cook Spare Ribs, 63.  
 The Organs of Vegetation, 65.  
 The Water Streams of Lancaster County, 67.  
 Truffles, and How to Grow Them, 71.  
 Take Care of the Birds, 75.  
 Times Changes, 80.  
 The Root as an Organ of Vegetation, 81.  
 The Chinese Twining Honey-suckle, 86.  
 The Pear Bark-louse, 88.  
 The Lancasser Farmer, 96.  
 Trees and Rain, 127.  
 The Internal Growth of Plants, 129.  
 The Teeth of Animals, 131, 147, 111, 179.  
 The Early Goodrich Potato, 133.  
 To Relieve a Choked Cow or Ox, 135.  
 The Mill Beetle, 137.  
 The Capacity of an Acre, 142.  
 The Sparrow, 143.  
 The Farmer's Friend, 143.  
 The Wire-worm, 144.  
 The Leaf as an Organ of Vegetation, 145, 161.  
 The Farmer's Curse, 152.  
 The New Lancaster County Directory, 156.  
 To Keep Clear of Bed-bugs, 160.  
 To Dry Fruit, 160.  
 To our Patrons, 166.  
 Too Many Irons in the Fire, 169.  
 The Hydraulic Ram, 173.  
 The Late Horticultural Exhibition, 152.  
 The Plant, its Structure, &c., 98.  
 The Origin of Wheat and its Culture, 100.  
 The Grape, 103.  
 Thorn-apple, 105.  
 The First Thousand, 111.  
 The Effect of Charcoal on Flowers, 112.  
 To Make Cuttings Grow, 112.  
 Temperature for Churning, 119.  
 Trim Your Trees, 121.

## V.

Value of Wood Lands, 14.  
 Vegetable Physiology, 20, 33, 65, 81, 98, 129, 145.  
 Value of the Cow, 94.

## W.

Work for January, 3.  
 Why is the Country Deserted, and the City  
 Thronged? 21.  
 Wheat, Its Present and Future, 36.  
 Wheat vs. Cheat, 37.  
 Weeds, 36, 57, 72, 87, 105, 118, 135, 151, 166, 187.  
 Why Wont the Butter Come? 43.  
 What Have We Done, and What Neglected? 85.  
 Washburn's Cultivator's Guide, 61.  
 Wheat, 148.  
 When to Cut Timber to Make it Lasting, 104.  
 White Weed, 151.  
 Wanted—a Clerk, 156.

## Y.

Yield of Blackberries per Acre, 40.

THE

# Lancaster Farmer

VOL. I.

LANCASTER, PA., JANUARY, 1869.

No. 1.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

WYLLIE & GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance,

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

*Publishing Committee.*

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H. K. STONER,  
JACOB M. FRANTZ,  
CASPER HILLER,  
LEVI W. GROFF,  
ALEXANDER HARRIS.

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S. S. RATHVON.

All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

All advertisements, subscriptions and remittances, to Wyllie & Griest, Printers.

### TO THE PUBLIC.

THE LANCASTER FARMER, as our published prospectus implies, will be a journal, in the magazine form, issued monthly, at one dollar a year in advance, and devoted to Agriculture, Horticulture, Mechanics, and general correlative Miscellany. It will be a gatherer and disseminator of facts, relating to these specialties, rather than the promulgator of mere theories, and yet it will not discard theories that have facts for their basis. As the members of its editing and publishing committees reside in different parts of the County of Lancaster, where they are in the pursuit of their usual occupations, they will, individually, constitute centres, to whom may be communicated, either verbally or written, such facts as it may be profitable for the public to know; from whence they will ultimately concentrate at the centre of publication, in the City of Lancaster. It is also understood that the entire membership of the Society, to whose parentage our paper is indebted for its existence, will constitute themselves a "committee of the whole," for the collection of material to provide for its subsistence, for in this, as in other living things, subsistence is the only condition of existence. In order to facilitate and render more safe, transmissions and remittances, the members of the editing and publishing committees are authorized agents, in their

respective neighborhoods, to receive subscriptions, advertisements and communications; and to receipt for monies on account of the same, in the name of MR. STUART A. WYLLIE, the responsible printer and publisher—unless it would be more convenient to communicate immediately with him, or with the resident members of the editing and publishing committees. Advertisements will be inserted at the usual magazine rates, and a reasonable deduction made to those who occupy a whole page, or advertisers by the year. As our journal will reach all parts of the County of Lancaster, and many places beyond its borders, and, moreover, will be preserved in a substantial form for ready reference, it will possess advantages, as an advertising medium, not possessed by a daily and weekly newspaper.

P. W. HEISTAND,  
H. K. STONER,  
JACOB M. FRANTZ,  
CASPER HILLER,  
LEVI W. GROFF,  
ALEX. HARRIS,

Publishing Committee.

LANCASTER, Jan. 1, 1869.

### INTRODUCTORY.

The County of Lancaster, in all the elements that are essential to social progress, constitutes in itself an empire. Its geographical position, its population, its wealth, its intelligence and the productions of its soil, have deservedly earned for it the proud title of the "Garden of the Keystone State." Based upon the numerical ratio of its last presidential election, its population cannot fall far short of two hundred thousand souls. Notwithstanding the development of its vast natural and industrial resources, there necessarily must remain many still undeveloped, and hence a great mission is devolving upon its people, which ought not to be evaded or disregarded. As a direct medium to assist in developing its Agricultural, Horticultural and Mechanical resources, and incidentally also its intellectual, social, and domestic elevation, THE LANCASTER FARMER has been instituted and ordained, and, without apology for its appearance, asks the generous support of

its people. It appears at this time, because the society under whose auspices it is published, conceived that the period in our domestic history has arrived, when such a Journal is demanded. The want of a local medium of communication with the world at large, has long been felt and desired, by a large and intelligent portion of our people, and that demand the Editorial and Publishing Committees, who have the matter in charge, are now in the effort to supply. Of course, its ultimate usefulness will depend, in a great measure, upon the intellectual and pecuniary support it receives from the people at large, and especially from that class for whose special benefit it has been instituted. Therefore, it respectfully solicits subscriptions from the people, and also useful contributions to its columns. No matter how illiterate individuals may be, if they are cognizant of *facts* that would be useful to others, and communicate those facts, in even the most ordinary language, they will be dressed in such a form as may make them creditable to themselves, and interesting to the public. As a matter of course, the more originality there is in contributions, the more they will add to the general stock of human knowledge, but they need not necessarily be entirely original, only so that they contain facts that would be useful for the people to know. It is the design of the Editorial committee to publish in the columns of the FARMER, all essays of acknowledged merit, that are read before the meetings of the "Agricultural and Horticultural Society," and also a synopsis of its proceedings. As an advertising medium, to implement manufacturers, nursery men, and others, the publishers believe this Journal will possess unusual local merit, and therefore a limited number of these will be inserted, and are respectfully solicited. All matter intended for the columns of the FARMER, will be subjected to the judicious exercise of that discretion which is claimed by publishers everywhere.

In conclusion, generous public, and especially citizens of Lancaster County, we do not come before you with an imposing Premium list, by means of which a temporary patronage is too often purchased, but we appeal to your native magnanimity and your local pride, trusting to base the value of our Journal upon its intrinsic merits, and anticipating your voluntary and unbiased support.

Our first number may not be a true reflex of the qualities, abilities and resources that may be developed through the experience of time and opportunity, but we hope it may be appreciated as a step in the right direction. Our existence is ushered in cotemporary with the *New Year*—

young, inexperienced 1869—and we sincerely wish its advent may be as propitious to all our subscribers and readers, as we hope it may be to our enterprise.

J. B. GARBER,  
H. M. ENGLE,  
LEVI S. REIST,  
W. C. DIFFENDERFER,  
J. G. MUSSER,  
S. S. RATHVON,  
Editorial Committee.

### ENTOMOLOGY.

From present indications, a period is approaching in the domestic economy of our country, when some knowledge of Entomology will be deemed absolutely necessary to the successful pursuit of Agriculture and Horticulture among our people. Whilst a very large portion of the insects which infest the vegetable and domestic productions of human industry, are absolutely noxious, and therefore destructive in their habits, yet there is probably nearly as large a proportion that are either neutral in their characters, or are unqualifiedly beneficial to the husbandman, and may therefore, be classed among the friends of vegetation. If for no other purpose, still the *facts* relating to these two classes of animals, are worthy of the study of the farmer, the fruit-grower and the florist; in order that they may be enabled to wage a war of total extermination against the former kinds, and secure the general protection or undisturbed action of the latter. To assist in furnishing a knowledge of the historical and economical details of the insect world, will be the expressed object of this department of our Journal; but to make that object effective and useful, will require the direct co-operation of the people, and especially of those who are immediately interested in the cultivation of the soil. This specialty will be under the immediate supervision of S. S. Rathvon, the resident editor; and he embraces this opportunity of saying to the readers of the LANCASTER FARMER, that carefully secured specimens of all insects or insect larvae, whether noxious or innocuous, should be sent to him, with a statement of the circumstances under which they were found—for instance, upon or in what substance, the nature of the damage they do, if any, as well as the locality and the date—replies to which will be made, monthly, through the Entomological columns of this paper, in order that they may secure the benefits of his experience, or a knowledge of the experiences of others, who have made Entomology an object of study. S. S. R.

KEEPING the soil well tilled is an important essential to a good crop.



## WORK FOR JANUARY.

At this season of the year, when nearly all vegetation is denuded of its foliage, many insect enemies, in embryo, are brought to the view of the husbandman, if he will only take the trouble to exercise his faculties of observation. Pendent from the naked branches of trees and shrubbery, or encircling them, will be found many cocoons, fallicles, or clusters of eggs, constructed or deposited by insects of last season, which contain the germs of hordes of destructive species, which will develop and overrun vegetation as soon as the warm sunshine of spring vivifies and brings them into active being. These, during the genial days of the present month, should be carefully searched out and destroyed. In crevices, under loose bark, under boards and flat stones, and in old outhouses, may be found the *pupa* and cocoons of many destructive moths—for, be it understood, that the *larvæ* of all moths and butterflies, without exception, are destructive, in a greater or a less degree, to vegetation, no matter how beautiful or how innocent, the perfect insects may be. If, in any sense, “an ounce of prevention is worth a pound of cure,” it is eminently so in this respect. We sincerely believe that a redundancy of noxious insects, is, in many cases, the direct result of neglect to check their increase at the proper season; simply because we are unwilling to attribute it to ignorance. Turning up the soil for a few inches in depth, in the month of January, also exposes many inactive underground *larvæ* and *pupæ* to the rigors of a frigid winter, and eventually destroys their vitality, or allows them to be devoured by crows, and such other birds, as pass their winters in our latitudes. For the collection of such noxious objects as are beyond the ordinary reach of a man, no implement can be used more effectually, than a good pair of springed pruning shears, affixed to the end of a long poll, and manipulated by a good stout cord in the operator’s hand. S. S. R.

## ORNITHOLOGY.

SINGULAR HABITS OF CROWS.—A correspondent, residing in Conestoga township, writes to us that “on the banks of the Conestoga creek a short distance above Wabank, in this County is a *Crow Roost*. At this place thousands of crows roost every night. They leave every morning and return in the evening. They do not go singly or in flocks, but in *four divisions*, one division going *nearly* due East, one *nearly* due South, another *nearly* due West, and the other *nearly* due North, and from these they branch off and spread over the country, and in the evening they return from precisely the same points.

“In the morning as soon as daylight begins to dawn, they are stirring about and flying from tree to tree, keeping up an incessant cawing, which is very disagreeable and annoying to the people living in the neighborhood. About sun-rise they start off, going in regular lines and always in the same directions, each division taking its own route, and it is very probable that the same crows always constitute the same division. Those which go in a Southerly direction, at a distance of five miles from the “Roost,” never deviate above a quarter of a mile East or West, from their regular route, either going or coming; never deviating *any* except when the wind blows pretty strong, when they fly very low and along the more sheltered places, in order to avoid the wind as much as they can. It takes them on an average about thirty minutes to pass a given point, longer if the wind is against them, and less if it is in their favor. Their line being fully one hundred yards in width, and they flying with great rapidity it is impossible to count them or even to make an estimation that will approximate closely to the number; but their number is very great. About ten miles from the “Roost” these divide into two branches; one going towards the Southeast, and the other towards the Southwest.

“Where, or how far all the crows that come to this place to roost go during the day is not known to the writer, but they undoubtedly spread over a large extent of territory to seek food, probably one hundred miles or more in every direction from the Roost.

“A few years ago their roost, which had been about a half a mile farther up the Conestoga, was destroyed by the clearing away of the woods which contained it, but they did not leave this section of the country, but immediately selected their present roost, to which they have come ever since.”

The above, communicated to the columns of the *Lancaster Daily Intelligencer* some weeks ago, was written by Mr. Hugh Strickler, an intelligent farmer of Conestoga township, sufficiently qualified to make his observations reliable, and therefore we transfer them to the columns of our periodical, with our editorial remarks; because we consider that there is an economic question of some importance attached to the existence of this “Crow Roost” in the county of Lancaster. The questions of the greatest interest to the farmer and fruit-grower that must suggest themselves in reference to this vast multitude of crows is, what do they feed upon during the long winter season? and how do they manage to obtain sufficient food? It is true, they possess extraordinary powers of abstinence and endurance, but

still *they must eat something* eventually. We have observed them feeding upon carrion of various kinds, and visiting the shores of rivers and creeks, picking up a dead fish, a mussel, or any other substance that might gratify the appetite of a crow. They will also attack corn in the field, and according to the observations of Mr. Chas. H. Nauman, as published in the November number of the *American Naturalist* after the manner of the common Hawk, they will attack domestic fowls. But these resources are only very partially available, or of rare occurrence, during the winter season. Whatever else they may feed upon, in emergencies, of this we have on many occasions been a witness, and that is, wherever there has been a freshly plowed field, during autumn, winter or spring, there the crows have congregated, and of all the busy bodies in that field, they have been the busiest. We have seen them coming up from the South in the morning, and returning thither again in the evening—perhaps to and from this very “Roost”—spending nearly the whole day in canvassing the plowed ground, in search of grubs, chrysalides, beetles, cutworms, and other delicacies congenial to the taste of corvine bipeds. It would be impossible to estimate the exact number of these noxious embryo that these crows would devour in a single day, unless we slaughtered them, and subjected their stomachs to an examination, but we feel sure that their name is legion, to say nothing about the legions that are thus prevented from ever coming into being. True, they *may* destroy some insect *friends*; but then if the *enemies* are destroyed, the friends will not be needed. A *crow-roost* therefore, barring its annoyance, may be a useful “institution.” S. S. R.

#### “EDIBLE FUNGI.”

In the December number of the *Gardener's Monthly*, is an excellent editorial article, together with extracts from the columns of the *Gardener's Chronicle*, (London,) on the subject of these singular ephemeral vegetable productions, which we commend to the readers of the FARMER. Among us, these fungoid plants, which spring up during moist nights in summer, and by mid-day are already in the process of decline and decay, are known by the names of *Toadstools*, *Mushrooms*, *Puff-Balls*, *Mauricles*, *Devil's Umbrellas*, *Truffles*, *Pipe Stems*, &c., &c., and the edible qualities of but very few of them, have been practically tested, but these few have been almost universally pronounced excellent. The larger number by far have been unhesitatingly pronounced poisonous, and although some of them without a doubt are really of that character, yet it appears from the

tenor of the article alluded to, that the proportion of the poisonous species is not larger than that which prevails among plants in general, and by ordinary care, may become familiarized, and as subject to detection as other poisonous vegetation is. We profess little or no scientific knowledge of this singular class of plants, but from our earliest boyhood up to the present time, we have on many occasions tested the excellent quality of the kind commonly called “mushrooms,” and within the last ten years also of those called “mauricles.” In our youth we knew persons who esteemed the “pipe-stems” a great delicacy, but we have not seen them for many years. Now, when everything that can be appropriated to human use as wholesome food, commands an enormous price, may it not be of some profit to direct attention to these delicious plants. In Europe, and especially in England, where these fungi are extensively eaten, premiums are offered for the best collections, and what the nobility, the intelligent and the rich approve and endorse soon becomes acceptable to the common people. On a recent occasion a large species was exhibited there, called the “vegetable beefsteak,” and which, when properly cooked, is said to have rivaled the best animal beefsteak. Another, of the “puff-ball” kind, was three feet six inches in circumference and weighed six pounds, and when sliced and fried, with egg and bread-crum batter, was far superior to fried egg plant fruit.

As these plants develop very rapidly, we may suppose, that after they have reached maturity, they go into as rapid a decay; and therefore, it is thought that the cases of poisoning, if any, may often have been from eating them after decomposition had begun. We know that wilted and decomposing vegetation, of other kinds, has sometimes an unfriendly effect upon the human stomach. Even in some of the known poisonous kind, there is only a sort of sickening intoxication which follows the eating of them. It is said, a French physician boasted he would eat any kind of fungus brought to him, the only precaution he observed, was to steep them in vinegar and water before he had them cooked. Although we would not counsel recklessness on this point among our readers, yet on the other hand, an excessive manifestation of caution might deprive them perpetually of a nutritious article of food. We have seen the day when we would no more have eaten a Tomato, on the ground that it was poisonous, than we would the fruit of the fabled Upas. Time and experience have completely dissipated this prejudice. It appears that all attempts at domestic cultivation in this class of plants, have ended in partial if not entire fail-

ure. We have often noticed this, that in enclosures of low moist woodlands, from which swine and cattle were entirely excluded, the various kinds of fungi were always found the most perfect and the most abundant. Perhaps this would be about as much cultivation as would pay at present, but doubtless a time may come when some other mode may be made available and profitable. Who, among our readers, will take the initiatory in the cultivation of *Edible Fungi*?

S. S. R.

### LANCASTER CITY AND COUNTY AGRICULTURAL SOCIETY.

The Society met at its usual hour in the Orphans' Court Room, in the City of Lancaster, Dec. 7th. Peter S. Reist in the chair and Alexander Harris, Secretary. Upon the reading and approval of the minutes of the last meeting, Capt. W. A. Spera and Stuart A. Wylie were elected members. After the transaction of its usual preliminary business, Peter S. Reist proceeded to read an essay upon "The Tilling of the Soil and the means of rendering it more productive." This essay was a graphic resume of agricultural reproduction and embodied such facts as would advance the interests of our farming communities duly considered. The ideas contained in this essay cannot be conveyed in a brief compass, and we leave its readers to pass upon its merits.

Upon the conclusion of Mr. Reist's essay, Henry M. Engle, of Marietta, rose and read a paper upon Grape Culture, which is furnished in the columns of the LANCASTER FARMER. When Mr. Engle had concluded the reading of his essay, he gave some practical information and illustrations on the Pruning of the Grape Vine, which is one of the most difficult matters to be learned save by experience. He remarked that he himself had groped years in the dark, before attaining the knowledge of the system which he now possesses. His method of pruning is termed the Renewal system, and differs in some particulars, as he says, from that of most horticulturists. It is rather difficult to convey, in a limited scope, a correct idea of Mr. Engle's system of pruning; and to be thoroughly understood, the operation must be witnessed. We would advise those who desire to acquire information on this point, to attend the meetings of the Society, where they may have an opportunity of seeing the operation repeated.

The Society took definite steps with reference to the publication of THE LANCASTER FARMER.

The following gentlemen were selected for the Editorial Corps:

Jacob B. Garber, H. M. Engle, Levi S. Reist, Dr. W. L. Diffenderfer, Dr. J. H. Musser, S. S. Rathvon, Resident Member.

For the Publishing Committee, the following members were selected:

Dr. P. W. Hiestand, H. K. Stoner, Jacob M. Frantz, Casper Hiller, Levi W. Groff, Alexander Harris, Resident Member, Wylie & Griest, Printers.

After the appointment of the foregoing committees, the Society adjourned, to meet on the first Monday in January, 1869.

### CUTTING GRAIN BEFORE IT IS RIPE.

An opinion extensively prevails in the United States, that grain is better if cut before it is quite ripe. The last year Prof. Isidore Pierre, of the university of Caen, in France, determined to try the matter by carefully conducted scientific experiments. He cut the same quantities of wheat, from the same field, on the 6th, 11th, 15th and 20th of last July, when the whole crop was cut by the mowers. He found a daily increase of nitrogen and phosphoric acid to the last—showing that the earlier it was cut the poorer it was in amylaceous and glutinous matters. He thinks that, though there is some loss in shaking out of over ripe grain, it is more than compensated for in the increased value of the perfectly ripened article.—*Gardener's Monthly*.

The subject embraced in the above paragraph involves an important question, relating to quantity and quality, and is worthy of consideration. Our millers, almost without exception, claim that wheat cut as early as possible, without causing it to shrivel, will produce more and better flour than when cut fully ripe. But the Professor and the millers are no doubt both right, when viewed from different stand-points. The former has reference simply to its nutritive properties, as a whole, without reference to its production of superfine flour; whereas the latter have reference only to its fine flour producing qualities. Chemists and physiologists generally agree, that unbolted wheat flour—commonly termed wheat-meal, or Graham flour, contains more nutrition, and is far more healthful, pound for pound, than flour with the bran separated. If it were popular to use wheat to the best advantage, there would be a great saving, in addition to its health producing effects. Our readers, after due trial and examination, will doubtless reach their own conclusions, if not ours, or the millers', or the French professor's.

E.

CONTRIBUTIONS are requested on any topics of interest to the agricultural community.

### GRAPE CULTURE.

Read before the Agricultural and Horticultural Society,  
by Henry M. Engle, Dec. 9th, 1868.

**MR. PRESIDENT:** Of all the Fruits, none have been more extolled than the Grape; and justly so, for it will flourish upon a greater extent of territory than any other fruit, (unless the Strawberry be an exception.) Although the belt between 30 and 50 deg. lat. of the temperate zones, seems to be its natural area, yet it may be grown beyond either extreme, to an extent which few other fruits can be; consequently, by a judicious selection and proper treatment, man may "sit under his own vine" over a larger extent of territory than will apply to any other fruit. The thousands of acres now in contemplation for planting, in addition to those already planted and fruiting, indicate that its value is becoming more appreciated than ever before; in this country at least.

The late improvements of our native grapes, which are still continued by crossing and hybridizing, certainly indicate that by and by we shall have them in such variety, and of such hardiness, size, and other desirable qualities as will suit all tastes, and be adapted to almost any soil and situation.

We have now the Concord, which is comparatively a good grape, nearly as hardy as an oak, and produces with reasonable treatment from moderate to extraordinary crops, in most of soils and situations. On the other hand, we have the Delaware, Iona, Martha and others, which, (although only from small to medium size,) in point of quality are but little inferior to the best foreign kinds. May we not, ere long, expect to obtain a variety combining all the desirable qualities? Such an achievement would be heralded by all lovers of the exquisite, the beautiful and the useful, as a great triumph; and fame awaits him who accomplishes such a result.

I am aware that public opinion is rather skeptical on the possibility of such a combination of good qualities; but that should deter no one from casting in his mite toward progress and improvement—for, considering what has been accomplished within the last twenty years in improving our native fruits, it is not reasonable to presume that the real, nor yet the ideal, has been obtained. The process of crossing and hybridizing is so simple and easy that, if only better understood, there would doubtless be much more accomplished in that way.

Such as wish to try their hand at it, will find directions in a number of works on Horticulture and Floriculture; but in A. S. Fuller's Grape Culturist the directions are so plain and simple that

no one need err. I know of nothing pertaining to Horticulture that has more charms, with promising utility, than that of producing new varieties of valuable fruits. I have within the last seven years produced over 4000 new seedling Strawberries, (all by design,) from more than 200 different crosses, with very gratifying results.

The Grape has one peculiar advantage over all other fruits, which is that it can be planted and trained where no fruit tree can be, for instance,—close to a wall or building, where it can be trained against the surface to almost any height, where it generally produces certain crops of best quality, so that whoever has a homestead, may have at least one grape vine, however much his ground may otherwise be occupied.

We shall gladly hail the day when grapes will be as abundant, from August to April, as any other fruit, which will be whenever we shall have a supply of good early varieties and also of late keepers. It is now no uncommon thing to see grapes keep in good condition until February and March. So long, however, as they will bring as much money for manufacturing into wine, as for the table—and the masses prefer a glass of wine to the most luscious cluster of fruit—we need not expect to see a full supply for the table, which might be had, were the fruit all appropriated to the uses intended by the Creator, instead of alcoholic drinks, the effects of which need no notice here—they are evident to all. There is therefore no excuse (except an unnatural craving) for turning one of nature's noblest gifts into a beverage that can neither allay hunger nor thirst, but which in its natural state, not only satisfies both, but is one of the most healthful articles of food that man can partake of. It may also, as well as any other fruit, be canned or converted into jellies, which have become commercial articles, and as such are destined to increase for years to come. There is therefore no apparent danger of overstocking the market yet awhile, although old fogies and croakers have warned us thereof for a quarter of a century. Let us then continue to plant and encourage others to do so; laboring toward and hoping for the amelioration and elevation of our fellow-men, until every one may sit under his own vine, enjoying the fruits of his labors in peace, with no one "to molest or make him afraid."

We can scarcely weigh or measure the influence that a single vine may have upon a family. For instance, for want of room we put in a plant at the corner of our humble cottage, the genial rays of the sun cause its buds to swell and expand, by and by they burst and the young shoots send upwards, meanwhile putting forth its little tendrils,

reaching as it were instinctively for something to hold by as a support. In the absence of a sprout or tree, we stretch a cord or wire, it soon takes hold, following its guide and as it grows fixes itself so firmly to its support that nothing but violence will detach it.

Continuing its growth, it may be trained in any direction that may be desired, either vertically or horizontally, up or down, over the cottage door or window, forming a protection from the rays of a hot summer sun, and thus becomes a necessary appendage to the house. If properly managed, the third season will form new attractions; it then commences to bloom—the fragrance, which is not excelled, adds new charms—gradually the berries and clusters form, they enlarge and expand, and through rain and sunshine, storm and calm, it continues to hold firmly and perfect its rich treasure ever ready to pour it into our basket at the proper season. The children observe what is forthcoming, they of course are tempted, (as big children too often are) but are told that whenever the fruit is ripe you all shall have a share; in anticipation of which they resist the temptation and cultivate respect for it.

The consequence will be also to respect their neighbors' fruit which so often suffers from such as have not any growing at home. The season arrives for gathering the crop—baskets are in requisition—Father cuts off the bunches, and all, from the least to the greatest, lend a helping hand—there is great rejoicing. What clusters!—other folks have none so fine—we must send some to neighbor A, and uncle B, and cousin C. It will hardly be questioned that, grown and gathered by our own hands, they will cause an influence for good that can not possibly be effected by the same quantity purchased with money. In conclusion, allow me to urge the planting of grapes. If you can not plant 100, or 50, or 10, plant at least one vine, take good care of it, and posterity will bless you.

### POTATO CULTURE.

Paper read before the Agricultural and Horticultural Society, by Dr. J. H. Musser.

On the second of April, 1868, I planted five pounds each, of the following varieties of Potatoes, Peach Blow, Monitor, Calico, Early Goodrich, Harrison, Buckeye, Michigan White Sprout, Early Rose, Prince Albert and Cuzco. Each variety was cut, as nearly as could well be done, to a single eye. Some of the sets were so small, that I feared they would not grow. This was especially the case with the Cuzco and Michigan White Sprout. They were all fresh cut, and none of them prepared by sprouting, or wilting; and as near in the same condition as could be.

The ground was a fresh plowed sod, lightly manured, but rather wet; and not in as fine order as I would have desired.

The experiment was not made to try what amount could be raised from a certain amount of seed, but to compare their respective qualities of early maturing, and productiveness. The ground planting and cultivation, were as nearly like as could be; the rows side by side, taken from the centre of the lot, where there was no tramping of the plants or ground in turning, whilst working them with the horse. They were all planted in straight rows, the sets about 8 or 10 inches apart. The furrow shallow and lightly covered with a hoe.

A few days after they were planted we had a very cold, freezing spell; and I feared my potatoes were all frozen. Some fine sets did fail to germinate, and when examined found them soft, and the skin loose. Think the frost killed them.

Observation made May 22d. The weather has been very wet and cool. Last ten days rained every day, and seldom saw the sun all the time. Wind mostly east. To-day clear and warm. Potato plants mostly up but some missing. Early Rose largest in top, and best up at this time. Monitor next largest. Michigan White Sprout and Prince Albert, nearly if not quite as large as Monitor. Buckeye, Early Goodrich, Harrison and Cuzco, near alike, but less than preceding. Calico and Peach Blow, least, and not all up.

Owing to the continued wet weather, we could not work the ground; and every little sod had taken root and grown, so that the patch was quite green with grass. At the first working with the cultivator and hoe the ground was too wet.

June 16th, Early Rose rather most in bloom. Monitors next, Michigan White Sprout rather more blossom than Buckeye, or Early Goodrich. The Buckeye most regular in size of stalk, and blossom buds. In size of stalk, Prince Albert next; then Cuzco and Harrison; Calico and Peach Blow back.

August 3rd, Early Goodrich, half the stalks dead, and the rest very yellow. Early Rose not quite so much dead as Goodrich. White Sprout declining considerably, but still more green than the former. Monitor rather more green than last Buckeyes beginning to fade, but still pretty fresh. Harrison rather more green. Albert and Cuzco quite green, and Calico and Peach Blow freshest of all.

August 11th, took up Early Goodrich. Tops nearly all dead. August 17th took up Early Rose; tops about as dead as Goodrich were on the 11th. Same day took up Michigan White Sprout. Tops not quite as dead as Rose.

September 1st. On account of the lot being under preparation to seed in wheat, were necessitated to take out the balance. Harrison all dead but a few stalks. Monitor more green stalks than Harrison, but most were dead. Buckeye most of the stalks still somewhat green. Prince Albert, Cuzco, Calico, and Peach Blow, quite green. Think their tubers would have grown some yet, but still the skin did not peel off much.

Being cut to the single eye, some varieties made more sets than others; and consequently they made longer rows.

Peach Blow yielded	40½ lb. length of row	112 feet.
Monitor	“ 92½ “ “ “	122 “
Calico	“ 63 “ “ “	130 “
Early Goodrich	“ 115 “ “ “	158 “
Harrison	“ 124 “ “ “	164 “
Buckeye	“ 128 “ “ “	187 “
Michigan W. S.	“ 123 “ “ “	190 “
Early Rose	“ 148 “ “ “	191 “
P. Albert	“ 116 “ “ “	194 “
Cuzco	“ 198 “ “ “	247 “

Peach Blow, tubers not so numerous nor large in size, and yielded about 6 pounds to the perch.

Monitors not numerous, mostly good size and some large. Yield about 13 pounds per perch.

Calico not numerous and rather small. About 8 pounds per perch.

Early Goodrich more numerous than any of the former, fair and smooth, some of very fine size, not quite 13 pounds per perch.

Harrison very numerous, fine size, fair and smooth, yield about 14 pounds per perch.

Buckeyes very large and smooth, not so numerous, yield about 11 pounds per perch.

Michigan White Sprout not so numerous, but of fine size, rather uneven surface, yield 10½ pounds.

Early Rose numerous, very fair and smooth, good size, with some large, but with more small than Buckeyes. White Sprouts or Monitors yield over 13 pounds.

Prince Alberts very numerous and fair, but mostly small. Yield near 10 pounds.

Cuzco numerous and many large, but also many not large and rather knobby. Yield over 13 pounds per perch.

I think if the Cuzco would have had time to mature, they would have yielded more to the perch than any others.

I think the earlier maturing varieties were more injured by the drouth in or about harvest than the latter varieties. The former being too far advanced to grow much after the rain of the 24th of July.

On the 2d of April, Father planted four rows across the lot in the same ground, which measured 14½ perches, and which were treated in every respect the same as the foregoing. First row

Buckeyes yielded 3½ bushels by measure. Very fine large potatoes. This would be 15½ pounds per perch, allowing 60 pounds per bushel.

Second row, Prince Albert, 4 bushels, not so large but very numerous, which, allowing 60 pounds per bushel, makes 16 pounds per perch.

Third row Michigan White Sprouts, a little over 4½ bushels, which makes over 17 pounds per perch. Large and fine.

Fourth row Early Goodrich, not quite 2 bushels. This would make only a little over or about 8½ pounds per perch. Very large.

The only difference in the planting and treatment was, that Father did not make his sets so small as I did. He always leaves two eyes to a set, and when they are full of eyes, they often have more. But why the Goodrich had so few tubers and so much larger than those in the other trial noticed, I can form no idea.

In 1 case Buckeyes	11 lb per perch,	the other	15½ lb per perch.
“ P. Alberts	10 “ “	“	16 “ “
“ M. W. S.	10½ “ “	“	17 “ “
“ Goodrich	13 “ “	“	8½ “ “

#### HOW TO RAISE FOREST TREES.

It is still in season to raise forest trees from the seed—that is, from nuts that contain oil; such for instance as the Black Walnut, Butternut, and Shellbark Hickory. But for the Oak and the Chestnut, it is too late, unless the seed had been kept in sand since October last. By depositing the Shellbark and Walnut in the soil a few inches below the surface, they will sprout in a short time after the warm weather sets in, in the spring. The Walnut may be readily transplanted, but the Shellbark should only be planted in such places as it is intended they shall remain. For this purpose a large deep hole should be dug, and mulching the ground thoroughly, to give the plant an opportunity to make a good tap root, without immediate side roots. It is for this reason that they should be left to stand where they were first planted, to insure a speedy and vigorous growth.

L. S. R.

#### AGRICULTURE A PROGRESSIVE SCIENCE.

Agriculture, as at present understood, may be regarded as one of the most progressive of modern sciences. When it be taken into consideration the vast advance that has been made in it since it first began to be treated as such, its astonishing progress will at once appear. The contrast will be quite sufficient without recurring to the epoch when men are said to have subsisted on the spontaneous productions of the earth, on the gains of the chase, and on such fruits and vegetables as being obtained with little exertion, were neverthe-



less sufficient to satisfy the demands of a people that had not as yet tested the advantage of civilized society. Drawing such a contrast might lead us to trench upon a state of society that would, to modern ideas, be rather viewed as fabulous and pertaining to the mythical. Rather do we wish to compare briefly the agricultural status of the Greeks, Romans and other early nations, when they had attained their height of civilization, and that which obtains in this science at the present day. It is true, the reader of the writings of Virgil, Pliny and Columella, will find much that seems new to the uninitiated in this branch of science; but after all the perfection of their attainments in agriculture be known, it will then be clear how great an advance the moderns have made upon the agricultural knowledge of the ancient nations. It is believed by modern investigators that the people of Egypt, Chaldea and China, have been amongst the first who extended the limits of Agricultural Science in ancient times. From Egypt this knowledge made its way into Greece, and thence was adopted by the Romans, and from them has been introduced among modern nations. Historians tell us that agriculture was in a flourishing condition as early as the day of Hesiod, (who has written extensively upon the subject); but the farmer who would use a plow such as was used in the times of Hesiod, would rather excite the ridicule of our Lancaster farmers. Without stopping to cite numerous instances of the difference between ancient and modern husbandry, it may be remarked that farming as a science, arose and was moulded into shape after the revival of letters and upon the new birth of nationality, which overspread Europe consequent upon this important event. With the downfall of feudal despotism and the enfranchisement of mankind from the fetters of mediæval ignorance and superstition, arose with the other sciences, likewise that of agriculture, and like them not alone to be re-habilitated with its ancient regalia, but to assume the splendid robes which were being prepared for it by the skilled hands of modern civilization and trans-Atlantic invention. Modern books on agriculture began to make their appearance in England in the early part of the sixteenth century, and so thoroughly have all branches of the science been investigated that it would seem a difficulty to conceive of any thing that could be added to complete the science. Perfect, however, as it now seems to be, its great masters declare it as yet only in its infancy, compared with what may yet be attained. When we consider the great multitude of inventions that have been made in this most inventive age, having for their object the facilitation of the pro-

cesses of agricultural operations, and reflect upon the condition of ancient husbandry when brought to its greatest perfection, we see one great contrast. This, however, is but one phase of agricultural life. When we reflect upon the vast aid that has been rendered to the science of agriculture by the developments of chemistry, we then have another illustration of the superiority of this age over all others. Chemistry, in its perfection of development, is altogether a modern science, it having remained for the past and present century to make the discoveries of the different component elements of matter. Instead of the four elements of the ancients, *Fire, Air, Earth and Water*, upwards of fifty elementary substances are now known to exist in matter, and it is by a skilful knowledge of these, that agricultural science can be properly understood. The developments that have been made in Botany, are likewise comparatively new, and upon a knowledge of these depends, in a great degree, success in matters pertaining to the growth of all the vegetable creation. A high attainment in the knowledge of agriculture cannot be secured without an acquaintance with these above enumerated kindred branches. The more attention we give to the study of these collateral subjects, the more agricultural knowledge will we accumulate. The knowledge of the ancients was based upon empirical results; ours is established by philosophical deduction and a knowledge of nature's laws. In so far then as we make progress in the development of the laws of nature, to such an extent do we likewise advance the science of which we now write. As agriculture is, so let us likewise be, progressive in our attainment of knowledge, and may the efforts of our Society ultimate in the incitement of our people to the necessity of keeping pace with the advance of this, the oldest and most honored science of mankind.

#### A VETERAN MAGNOLIA.

There is now growing in Lancaster county, on the Litiz turnpike, near the Toll-gate, a magnolia tree—*Magnolia Acuminata*, (Linn.)—that is fully six feet in circumference for thirty feet, which would make two splendid saw-logs of fifteen feet each. It is lofty and spreading, very umbrageous, and was the ornament of the place for many years. It was known as the "cucumber tree" by the people in the neighborhood. Whether the tree stood in the original forest before it was cleared, or whether it was planted by some of the old settlers afterwards, is a mystery; but under any circumstance the tree cannot be less than a hundred years old. Whilst on a recent visit to Stark

county, Ohio, we saw specimens of the cucumber magnolia that were over three feet in diameter. Our opinion therefore is that this tree was either planted where it now stands by some person now unknown, or that the seed may in some manner have been brought from some locality where this tree is indigenous.

A very different and much smaller species—the *Magnolia Glauca*, (Linn.)—is common in some parts of Lancaster county, especially at a locality called “Smithville Swamp,” about ten miles south-east of Lancaster city. It is very fragrant, but difficult to grow on uplands. L. S. R.

### THE CULTURE OF FRUIT.

Read before the Lancaster Agricultural and Horticultural Society, December, 1868, by P. S. REISER.

Tilling the soil and dispensing its productions among the families of mankind, is no doubt the greatest and noblest of human occupations.

Railroads and Telegraph lines are merely facilities for an economical administration of the work, and manufacture and commerce themselves would produce but small results in the absence of the products of the soil. He who effects the growth of two blades of grass where but one grew before, and she, who bakes the best and most bread out of the smallest quantity of flour, are really greater benefactors than he who wins an empire.

Living in an age of progress, it is our duty to form ourselves into associations to consult upon the best modes of applying art to nature, in order to enhance the quantity and quality of the earth's productions. Providence, through nature, has proved more propitious in southern climes than in northern ones. Armies consisting of millions have been marshalled, immense walled cities have been reared, and costly edifices have been constructed, in ancient times, in southern latitudes, which could not have been accomplished in the north without the aid of modern improvements and their artificial appliances. People now are, however, more prosperous in northern climes than they are in those of the south, notwithstanding all their natural advantages, and this is chiefly owing to their innumerable improvements, and the application of artificial means. The southern people depend too much upon nature, or a blind faith in Providence, forgetting, or not comprehending, that Providence works for man through means, requiring his cooperation in effecting results. They have not the five or six non-producing or winter months we have; are not compelled to keep in store the surplus we are, and hence their people become improvident, shiftless and enervated. It is true that in compactly built cities, and among the

ruling and wealthy classes, there is an approximation to northern civilization, but among the masses it is far otherwise. We are living in about 40 degrees north latitude; we have biting frosts in May and frequently in June, and again in September, scourging our young and tender vegetation. The ground, out of which we expect to raise our necessaries of life, often lies frozen from ten to fifteen inches, or is covered with snows for four or five months in every twelve, with the thermometer often down to, and below, zero. Notwithstanding all these apparent disadvantages, as a christian people, we seem to feel that it is our bounden duty, not only to provide for ourselves, but also to make provisions for the domesticated subjects of animated nature, out of the inanimate productions of the earth; and not only for ourselves and them, but also for the living beings of other latitudes; and it may also occur that the surplus of the six months productive outdoor labor, which the husbandman appropriates, may, under unfavorable circumstances, be required to sustain the community for a number of years. Such contingencies have been partially realized by this community for some years past.

Inasmuch as the fruit crops of our section have failed for several years, the duty devolves upon us as a progressive people, to adopt such plans and measures, so far as these may be applicable to our case, as may tend to, not only recover what we have lost in the failure or diminished yield of the fruit crops, but also to effect an improvement in the quantity and quality of the future yields.

Here comes the great problematic contrast. Instead of large and thrifty apple orchards, interspersed with young and tender peach trees, yielding so prolific and abundant as to induce the people to make an unprofitable use of their surplus, we find good fruit crops “few and far between”—in short, we have hardly anything but old, decayed, and partially defunct orchards of fruit trees, and even those that are apparently young and thrifty, are doing no good; so that instead of having a surplus to sell, we are absolutely compelled to depend upon the shambles of the green grocer for our home supply. I confess that the reason for all this is not very obvious to me. People are attributing this effect to different causes. Some think it is attributed to the clearing away of our forests—some to our long and cold winters—and others to gradual changes which are taking place in nature, &c., none of which are made very clear to my mind. One thing we have certainly experienced by practice, in our wheat crops, raised on the original soil for a number of years, without a change in the soil, wrought



by the application of stimulants—such for instance as plaster of paris, and afterwards lime, in addition to good stable manure, or some other equally effective fertilizer, and our lands could not have been brought up to what they originally were for the production of wheat crops, and other cereals. Comparatively the same rule may obtain in reclaiming our soil for the production of those fruit crops which for a number of years have so signally failed. Our fruit soil, so far as relates to apples, pears and peaches, seems to be worn out, the fruit producing elements exhausted, at least I feel satisfied that the essential ingredients necessary to their production are nearly absorbed.

At first when the soil of the Eastern States would not yield the usual wheat crops, the bulk of wheat, for general consumption, came from the Western States. At present it is shipped from the extreme Western States, and our soil is being renovated again, even beyond its original strength. We are now receiving our apples from the west, and in a few years, both they and we, may be compelled to ship them from the extreme west, the same as the wheat is. Since then we may inferentially conclude that our fruit soil has become exhausted—or “worn out” as it is commonly called—the duty devolves upon us, as a progressive and philanthropic people, to ascertain, if possible, by practical experiment, what artificial application—what means are required to renovate the soil and adapt it to the growing of those fruits, in which it has seemed to be so defective, in order that we may not only be able to raise our accustomed crops from the natural soil, but also to compete with other advancing interests and demands—with the increasing population, and the productions of manufactures.

With my limited abilities I can do little more, in these brief remarks, than to call the attention of this Society to the subject, without pointing out any particular way in which the desired end may be gained; because I do not consider myself competent to do so. I may however be permitted to suggest this much, that no matter whether what I have advanced is truth or error, it still behooves the people to *plant*, just the same as if there was no such thing as a failure. If we plant and nurture fruit trees, it brings a crop of fruit within the pale of possibility; but if we do not plant, of course we cannot expect anything whatever. To plant then, is one step in the right direction; but we must not stop here, for in my humble opinion it is just stopping here, that mainly causes the results which we so much lament. We *must* find out, if possible, what the soil upon which we plant needs, and then supply that need by artificial means.

Various and many are the apologies which people make for not planting fruit trees. Some have no spare land, some no land at all, and others declare it of no use, for the hand of nature is against them. To those who have no land of their own, I would still say plant, for if you do not reap the harvest yourself, another one may; and the fact that such a harvest exists, even though you do not possess it, is to the unselfish man, a lasting reward. There might be both fruit and fruit trees, in specially favorable seasons, if landlords and tenants would freely plant and carefully tend. To foster these ideas and inculcate these duties, is the mission of our social affiliation. Such societies should receive the intellectual, moral and pecuniary patronage of the community, and especially of their membership, because when conducted by the right spirit and towards the right end, they conduce to the welfare of man and the prosperity of his country.

In conclusion allow me to say, that according to my opinion, if practical men were employed by the national or state governments, through the instrumentality of Agricultural and Horticultural Societies, to analyze and experiment on soils, much might be effected in the way of reclaiming those elements, in which they are deficient. That we may be enabled to produce the abundance that our fore-fathers did, is “a consummation most devoutly to be wished,” and with our improved varieties of apples, pears and peaches, and our more perfect implements and appliances, together with the increased diffusion of knowledge, it seems a humiliation that we have not done so. Not much less than \$100,000 worth of apples have been imported into Lancaster county the present year. A single operator informed me that he sold five hundred barrels, averaging \$5,00 per barrel, since the 1st of October last. Fruit shipped from abroad has not the same taste, and is not relished so well by our people, as that which is raised in our county. These things command our serious attention, and commend themselves to the whole community. Let us then encourage nurseries and fruit-growing, and patiently and perseveringly “work and wait,” resting under this assurance, that if we do not *sow* we cannot expect to *reap*—if we do not *plant*, we cannot gather *fruit*.

A correspondent informs us that the Persian Insect Powder for the last two years has been very successfully used by several stock feeders in destroying lice on their cattle, merely by dusting it over them and brushing it among the long hairs.

### THE PHENOMENA OF RAIN.

Read before the Horticultural Society.

It may perhaps not be uninteresting to the members of our organization, to devote a short time to the investigation of the Phenomena, which nature affords us in the descending showers of rain sent to fertilize the earth and refresh the vegetable creation. This from first impression might strike the mind as a subject partaking too much of the speculative, to be introduced before a society organized as ours for the dissemination of practical knowledge; but the further we advance in the investigation of the facts of meteorology the more we come to discover them necessary to be known, and of the greater practical utility in their bearing. The phenomena of rain may be designated as the distillation of water which falls upon the earth in drops, or globules of various sizes, and the causes which give rise to its collection, and descent from the clouds have engaged the attention of some of the most eminent philosophers of modern times. Moisture ordinarily descends upon the earth in a two-fold manner; in that of dew, or fog, and also in showers of rain. In the former of these methods, the drops of moisture are so small and insignificant, as to be altogether invisible to the naked eye; whilst in the latter they are of a larger size, yet have a specific gravity little superior to that of the atmosphere, and may therefore be regarded as hollow spherules rather than drops. Without designing to unfold in a prolix and discursive manner, the different theories which have at various times been advanced as to the different influences thought to combine in the formation of rain, in the upper strata of air, and its descent therefrom, that which may be regarded as the generally received one, will alone be considered.

The rays of the sun together with the influence of the circumambient atmosphere has the effect of attracting moisture from the earth, the rivers, and the ocean, and this moisture so detached rises in the air as small bubbles or vesicles, each of which is specifically lighter than the atmosphere itself. These vesicles are buoyed up by the atmosphere until they arrive at a region where the air is in a just balance with them, and here they float until by some new agent they are converted into clouds, and thence into either rain, snow, hail or mist. But what it is that effects the change of the vapor into clouds, and of these again into rain has been a subject of much dispute amongst the learned, and perhaps the discussion may not yet be ended. It has come, however, to be somewhat generally believed that the cold which occupies the superior regions of the air, chills and condenses the vesicles upon their arrival

from a warmer locality, aggregates them together and causes them to coalesce into little masses; and by these means their quantity and matter increasing in a greater proportion than their surface, they become an overbalance to the thin air, and accordingly descend in rain. The aggregation and precipitation of the small particles of moisture seem to be explained upon the following theory. After the vesicles have reached the point in the atmosphere in which they with it form an equipoise and thence meet with a colder current of air than that contained in them, this internal air being contracted into a less space, and, as a consequence, the watery shell being rendered thicker is thereby made heavier, and thus the precipitation of rain commences. These atomic particles of rain thus uniting as suggested in the upper regions of the atmosphere, they continue to aggregate others to them during as it is supposed, their whole descent to the earth. This may have been within the observation of many of the members of this Society that on the summit of a hill during a shower, the drops of rain were small, but in descending the hill, they become larger and larger, and at the bottom thereof, the rain was impetuous.

Cold is not believed however, to be the only agency in the formation of rain, but winds have likewise much to do in effecting the aggregation of the component ingredients of the rain-drop. Winds blowing upon a cloud seem to cause the vesicles, or small elementary atoms of moisture, to coalesce at a high altitude, and thus enable them to descend towards the earth, and this effect is yet the more considerable, when two opposite winds blow together toward the same place. It matters little by whichever of these ways the small particles of moisture have been made to unite; when once they begin to descend, they will continue until they have reached the earth. From the force of gravity, they will all tend towards the centre of the earth, and the farther they fall, the more coalitions they will make, and the more coalitions the more matter there will be under the same surface; the surface only increasing as the squares, but the solidity as the cubes, and the more matter under the same surface the less friction or resistance there will be to the same matter.

Were the atmosphere at all times and in all parts of it of a uniform temperature, we should never have either rain, hail or snow. By what means the atmosphere is made to be of various degrees of temperature at different heights, and in the several parts of it, we now proceed to unfold as it is explained by philosophic observers. Upon this fact it has already been perceived, are

dependent the conditions necessary to effect the phenomena of rain. A general and well understood truth of which science has become cognizant, by a wide and cautious induction, and which may be regarded as the foundation of meteorological science is this, that nearly all the changes which take place on the surface of the earth, are due to the action of the Sun. As the air gets heated by the rays of the Sun, it becomes specifically lighter, and tends constantly to ascend, being pressed upwards by the heavier circumambient fluid. The effect thus produced upon the air, by the impulses from the Sun, is the great motive power which gives rise to all the currents of the atmosphere, from the gentle zephyr which but slightly ruffles the surface of the tranquil lake, to the raging hurricane which overwhelms whole fleets, and destroys in a moment the hopes of the husbandman for an entire season. This fact so well established by science, renders it unnecessary to seek for any other *primum mobile*, for the great system of constant agitation to which the aerial ocean is subjected. Men no longer believe that the winds are subject to the commands of a fabulous Æolus, but are dependent upon and are originated by the rays of the Sun acting upon the atmosphere.

The most striking instance of the effect of the Sun's rays in giving rise to the currents of wind, is found in the trade-winds on either side of the Equator. These winds blow continually in the same direction, (except in the Indian Ocean,) north and south of the Equator, and to them is chiefly due the peculiar climate of the United States, most of which lies in the dry belt of the northern trade-wind. "There are two of these dry belts on each side of the Equator, and these winds blow diagonally into each other, producing by their mutual action, a belt of rain about 500 miles in width under the Equator, and directly under the Sun. These winds are concentrated by the lofty range of mountains in South America and Mexico, and turned northward, carrying with them this belt of rains. In our summer they extend as far west as the middle of Texas; thence north through the middle of Kansas; they curve gradually eastward and pass to the Atlantic by the line of the great northern lakes, covering all the old States with rains from this equatorial belt; extending no farther west than the middle of Texas and Kansas, they leave the western portions of them to the dry California climate, thus limiting the culture of our great American staple to the already settled portions of the country."—*Agricultural Report*, 1861, p. 275.

These rains from causes not yet ascertained by science, are irregular as to their time, quantity

and duration. In the Spring they are more concentrated, giving us the heavy beating rains of March and April; and in July and August they cease almost entirely. We have no rains of any consequence from the evaporations of our country; these we see in the form of dew only, or at most they but slightly increase the amount of our equatorial rains. From this source of our rains result the extremes so peculiar to our American climate. At one time our ploughed lands are saturated with water, our clay soils are melted and in drying out are compacted so as to be much harder than the frosts left them in Spring before they were broken up. Then follow quickly droughts parching and baking the soil, making it unfit if worn, for profitable production. These influences of the climate so act upon the soil that the standing topics of our agricultural writers are drainage, deep ploughing, and constant stirring of the soil.

From the limited study which scientific men have devoted to meteorological knowledge, even already a considerable amount of useful information has been collected. The hypothesis already cited to explain the cause of rain seems to account likewise for the well established fact that a cold is usually a wet summer, and a warm, a dry one; because the principle of precipitation obtains in the one case, and is wanting in the other. And does it not likewise explain, to a certain extent, why we have usually most rain about the equinoxes? Because the vapors arise more plentifully than ordinary in the Spring, as the earth becomes loosened from the brumal constipations, and because also, as the sun recedes from us in the Autumn the cold increasing the vapors that had lingered above, during the summer heats, are now despatched down in the form of rain. It also accounts for the fact that a settled, thick, close sky, scarcely ever rains till it has been first clear; because the equally diffused vapors must first be condensed and congregated into separate clouds, to lay the foundation for rain, by which means the rest of the face of the heavens is left open, and pervious to the rays of the sun.

These instances are cited as simple illustrations of the manner by which the face of nature may be discerned, and the kind of weather predicted. Nature instead of being governed by a system of arbitrary decrees, is regulated by great immutable and unchanging laws, and so soon as these come to be fully understood, their uniform invariability in all seasons, and in all climates, will be perceived and recognized.

When once the general principles of meteorology be perfectly understood amongst the agricul-

tural community, they will cease to be regarded as matters of trivial concern. The labor bestowed upon investigations of this kind, will then be seen as of the greatest practical importance, and the basis of the highest improvement of which the art of agriculture is susceptible. The space of an essay is altogether too limited a scope to do more than point out the subject as worthy of study, instead of unfolding comparatively any information of which the theme is capable of imparting. It is believed that meteorological, like many of the other sciences, is as yet in its infancy and that when the time shall have come when its truth be fully comprehended, the labors of the agriculturist will be greatly lessened, and his success doubly insured. After full and perfect observations shall have been made upon the laws of nature, and a full code of inductions collected therefrom, the farmer will, with great certainty, be able to augur the signs of the weather, and the seasons predict the advent of rain, hail and the different phenomena of nature and thereby be enabled to take advantage of its aspects, and mould his agricultural operations in accordance therewith.

If the belief of the celebrated Augustus Comte be true that a hierarchy of the sciences, like the Plastic power of the ancient philosophers, presides over universal nature, then it would seem as if the attainment of a perfect knowledge of the workings of this nature would in time be within the reach and comprehension of man. Why then, should not our society take an interest in the meteorological observations of our country, and yield its aid in the collection of information for general diffusion amongst the people? Great results are anticipated from the deductions which are promised to be deduced from the observations of the zealous corps of meteorological reporters, who now span the vast extent of our immense country, from the pine-clad hills of Maine to the grazing plains of Texas.

#### VALUE OF WOODLANDS.

Could every cultivator of the soil be impressed with the important part which forests bear upon Agriculture and Horticulture, he would most assuredly discontinue his wholesale onslaught upon the comparatively small proportion of woodland, which is yet left to operate upon. Before the discovery of coal, there was no necessity to caution him to save his timber. Self-interest prompted him to do so. Wood for fuel selling at 6 to 10 dollars a cord, with a fair prospect of doubling in price, was a sufficient stimulus to withhold the

uses understood, and its quantity in a measure ascertained, than the destruction of forests began anew, and if continued in the same ratio in the future, the "Woodman's axe" will soon become a relic of the past.

The effects produced by the destruction of timber are now seen and felt by many; but the mass of farmers and fruit-growers do not yet fully realize them. We often hear it remarked that our grain and fruit crops are much more uncertain than formerly, and the usual impression is that there has been a change in our climate; and that no remedy can be applied. That the climate—strictly speaking—has changed in any perceptible degree within the last century, we are not disposed to admit, but that the temperature is more variable—especially in the winter season, in consequence of the country being denuded of a large proportion of its forests, will hardly be questioned. A few days of mild weather in the winter, will soon start vegetation in cultivated sections, where there is little or no forest; and a sudden change to cold always effects the young and tender growth injuriously, while under similar circumstances in largely timbered regions these changes are very little felt. We admit, there are degrees of cold which destroy vegetation generally, but crops suffer less frequently from this cause than from sudden changes.

The Western Pioneer—who is said to be an eastern man developed—is acting prudently in the planting of timber instead of destroying all within his reach. He can thus indulge the pleasant hope, that if not he, his posterity at least may reap the benefit of his investment.

It shall be our province to plead with the landholder in favor of *cutting down* less and planting more trees. If his acres be too few to add to them depth instead of surface area, by deep plowing, subsoiling, and enriching them to a proper degree of fertility. At the same time he may rely upon the surrounding groves and forests acting well their part in the economy of nature; thus our crops may be increased by a different method of tillage, instead of decreasing as they are under the prevalent mode at present. For posterity's sake the improvident landholder should know that the demand and value of lumber is steadily increasing, and broad as our National Domain is, there is a limit to the squatting from one tract of virgin land to another, leaving only exhausted and sterile soils behind. It is to be hoped that laws, state and national, will ere long be enacted exempting from taxation timbered lands generally, or so far at least as they are necessary to keep up the proper balance between wooded and cleared lands.

No sooner however was coal discovered, its

**CLEMATIS FLAMULA.**

There are few of any climbing plants which have a better claim to the attention of those who love flowers, than the sweet-scented clematis. It is exceedingly graceful in habit, with very neat but not redundant foliage, of a drooping and festoon-like aspect, and although its flowers are small, white, and with no great pretention to beauty, they fill the warm air of the Summer evenings with a delicate and delicious fragrance, that does not fail to win favor. The plant is hardy, is a perennial, and wants but little attention. In the first year of its planting, or subsequently when the winter is unusually severe, it will freeze down to near the ground in this vicinity, but the following Spring it again throws out shoots, which by the first week in July attain a growth of ten to fifteen feet, and then it commences to bloom. When this period arrives it neglects the business of growing, but gives us during July, and part of August, a perfume not rivalled by "Balm of a thousand flowers," "Love among the roses," or any of the other compounds to which perfumers give these and like attractive names. It also retains its foliage into the Winter. As we write—late in December—there is a vine near by which is still green, having been thus far only partially bleached by the snows and storms of Winter.

With these merits, there seems to be no good reason why the Clematis Flamula is not more frequently seen in the flower-garden. As far as our observation goes, it is comparatively rare, doubtless hence it is not better known. To those intending to plant flowers and vines next Spring, our advice is to place this lovely creeper among the first on the list. We shall receive thanks for the counsel at some future time. D.

**SCIENTIFIC AND MECHANICAL.**

*What to Wear on the Feet.*—One of the well-established facts of physiology is that anything worn upon the feet which, like rubber or patent leather, prevents the passing off of the insensible perspiration, is detrimental to the health. Those who regard the organic laws as having any sacredness, will not use patent leather boots, covering the whole foot, for constant wear, but limit them to particular occasions. Rubber ought to be removed, and something else substituted in their place, as soon as the feet come out of the wet which occasions their being put on. The same is true of all boots that are water proof. They should be worn only when times of exposure make them necessary. This is sufficiently well known with regard to rubbers; but few think that leather boots are objectionable, for the same

reason, in proportion as they are water-tight. There are comparatively few of them which are perfectly so; yet there are many, which worn as they are, day after day, in dry weather as well as wet, must, by retaining a large part of the foot's perspiration, have an unhealthful effect. It is a good practice to bathe the feet after removing a pair of water proof boots which have been worn during the day. With many men this is a necessity, and it would be such with many more if they knew all the requirements of the laws of hygiene, to say nothing of any other reason. To give the boots themselves a washing out occasionally would be advantageous, as the feet must be allowed to perspire naturally or the skin in some other part is liable to be overtaken, and it is stated by medical authority that many skin diseases have been produced by neglect of the feet in this particular.

*How to Buy Furs.*—In purchasing furs a sure test of what dealers call a "prime" fur, is the length and density of the down next the skin; this can be readily determined by blowing a brisk current of air from the mouth "against the set of the fur;" if the fibres open readily, exposing the skin to view, reject the article, but if the down is so dense that the breath cannot penetrate it, or at most shows but a small portion of the skin, the article may be accepted.

**A LARGE TANNERY.**

The following brief description of Mr. Amos Hollinger's Tannery, (said to be the largest in this county) which is located on the Willow street pike, about 2½ miles south of this city, is furnished the *Express* by a correspondent of that paper:

The engine house of the tannery is 42 feet by 20, two stories high, and contains an engine of twenty horse power. There is also a boiler-house, fire proof, which is 22 feet square, and contains two boilers, each of which is 30 feet long and 30 inches in diameter. In consequence of the engine and the two boilers occupying two separate apartments, the steam is conveyed from one to the other by means of a large caliduct or pipe, some 70 feet long. The stack connected with the boiler-house, which serves as a draft, is 60 feet high, and contains 20,000 bricks. The currying-shop is 75 feet by 30, three stories high, with a large drying-loft capable of holding 1,500 sides of leather. The yard is 100 feet long and 75 wide, of which 75 feet are under cover, and which is used for the purpose of a drying loft and leather finishing department. The dimensions of the main bark house, are: 51 feet long, 37 wide, and 40 feet high. The number of cords of bark used a year, is about 600. There are 100 vats,

most of them being eight feet long, five feet wide and five deep. There are from 20 to 30 workmen employed all the year, who make exclusively oak harness and bridle leather, and turn out over 200 sides per week. Mr. H. is an energetic business man and has established a large and extensive trade throughout the Middle and Eastern States.

### HARD MILCHING COWS.

In almost all herds of cows will be found some animals whose milk is drawn with a great and painful expenditure of muscle, when no disposition to hold up is manifest. The cause is generally found in a defective formation of the teats, the milk ducts being obstructed or contracted. A correspondent of the *New England Homestead* states that he had a valuable young cow that milked so hard from hind teats, as to make the operation slow and very fatiguing to the milker. He adds: "By the aid of a probe I ascertained that the obstruction was at the lower end of the teat; I therefore thought a little surgical skill might remove the evil. I took a very narrow-bladed knife, gave it a keen edge, took the teat in my left hand, inserted the point very gently into the milk passage, and then, without fear or trembling, gave a sudden thrust of the knife in the right direction, and the cure was affected.

"The cow started a little and then stood still. A few drops of blood followed the cut only. I then operated on the other teat with the same result. Another young cow that came of the above-mentioned, had lost one-quarter of her bag, and milked so hard from one teat, that the stream of milk was no larger than a small knitting-needle. With the same success I operated upon that. They milked afterwards as easily as any one could desire, and no leaking of the milk followed."

### HOW TO SAVE GIRDLED FRUIT TREES.

To tell how to save trees injured in this way will be to tell how I saved over a hundred trees, seven years planted, *completely* girdled by mice in my orchard a year ago last month. There had been for some time a heavy snow on the ground; and mice being plenty and in a starving condition, with nothing else to eat, they ate *all* the bark from the trees so far as they could reach, some of them for a foot up and down all around, and portions of the sap-wood all around, some of them at least half an inch deep. As soon as the damage was discovered—which was the first thawing days—I banked the snow up around them for a foot above the injury; then, as fast as the soil thawed enough, I banked with it about the trees

to the same height. This was all the attention they received; and to-day they have all the damaged parts covered by almost as thick a coating of bark as the uninjured portion of the trees. My directions, therefore, for saving trees girdled by mice or other means, would be to follow the practice used to save my own, when girdled within a reasonable distance from the ground; when done higher up, this course would be impracticable, and we should have to look to some other covering than soil to protect the surface until a new bark was deposited. Common clay must be used for this purpose. If too high up to reach by banking, bind the clay on it. The sooner the surface is protected after injury, the better. The death of the tree, when girdled, is caused by the seasoning of the sap wood.—*American Journal of Horticulture.*

**FEEDING SHEEP FOR MANURE.**—One of our nurserymen sent a man to Michigan to buy sheep to fatten this winter. He bought 400 good wethers, three and four year olds, that average about 95 pounds each, at a cost here of \$3.10. His object is to make manure. He gets about a load of manure to a sheep, worth \$3 or \$5. He has adopted this plan three or four years, and his land already shows the effect. He thinks it far better manure than that which he draws from the city. I told him if he would use oil cake the manure would be richer still. There will be a great many damaged beans this year, which, if not mouldy, can be fed to sheep with advantage. And the manure from beans or peas is nearly as rich as that from oil-cake.—*J. Harriss in Agriculture.*

**MEETING OF THE PENNSYLVANIA FRUIT GROWERS' SOCIETY.**—Mr. S. B. Heiges, of York, Secretary of the Pennsylvania Fruit Growers' Society, has given notice that the annual meeting of the Society will be held in the Orphans' Court room, Harrisburg, on the third Wednesday of January, being the 20th, 1869. Discussions on all the new fruits, from strawberries to apples, inclusive, will be engaged in. Members are desired to attend, and exhibit such fruits as they may have.

This meeting will doubtless prove to be interesting and instructive, as all the former meetings of the Society have been.

It affords us pleasure to learn that W. G. Kafroth has consented to act as agent for the Lancaster City & County Fire Insurance Company. Mr. Kafroth's gentlemanly bearing will soon ingratiate him with the people of Lancaster, and the Company he represents is in need of no commendation.

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TEETH EXTRACTED WITHOUT PAIN with the use of Nitrous Oxide Gas, Ether, or the Ether Spray

TERMS, as low as any in the city, when low priced material and low priced work are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

S. WELCHENS, D. D. S.

**CARD!**  
**REIGART'S OLD WINE STORE,**

ESTABLISHED IN 1785,

**No. 36 EAST KING ST., LANCASTER, PENNA.**

The reputation of REIGART'S OLD WINES AND BRANDIES for purity and excellent quality having been fully established for nearly a century, we regret that the conduct of some unprincipled dealers, who re-fill with and sell from our labeled bottles their deleterious compounds, compels us to adopt the annexed trade mark, which in future, for the protection of ourselves and our customers, will be found on all our old bottled Wines, Brandies, Gins, Whiskies, Bitters, &c.



TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to prosecute to the fullest extent of the Act of Assembly, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

H. E. SLAYMAKER, Agr.

**LANCASTER**  
**UNION SPOKE AND AGRICULTURAL WORKS**

Corner of Water and Lenou Sts., Formerly Shirk & Royer's Warehouse, on the Penna. Railroad, near Baumgardner's coal yard, and 2 squares west from the Railroad Depot, where we manufacture the

**LATEST IMPROVED GRAIN DRILLS.**

Also, Grain Drills with Guano attached, warranted to give satisfaction. *Rockaway Fans, Older Mills, Crushers and Graters*, for horse or hand power, which will grind a bushel of apples per minute by horse power, and are warranted to do it well. We would also inform Coachmakers that we have put up in our Shop two of the latest improved *Spoke Machines, or Lathes*, and are fully prepared to furnish the best quality of SPOKES of all kinds, sizes, dry or part dry, and warranted to be a good article. We buy none but the best split Spokes, and have now on hand 100,000 SPOKES. BENT FELLOWS of all sizes; SHAFTS and CARRIAGE POLES, BOWS, &c., of seasonable stuff, constantly on hand.

As Mr. Keeler has been in this business 16 or 18 years, and having served an apprenticeship at Coachmaking, he knows what the trade want in that line. All kinds of Bent Stuff for sale, or made to order—and Spokes of all sizes turned for persons having them on hand in the rough.

NOTICE TO FARMERS AND MECHANICS.—Planing and Sawing done at the shortest notice. We have one of the best and latest improved Surface Planes for operation.

**KEELER & SHAEFFER, Lancaster, Pa.**

LANCASTER, June 25th, 1868.  
 EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business.  
 H. B. PARRY.

**W. M. WHITESIDE,**  
**DENTIST,**

*Office and Residence,*

**EAST KING STREET,**

Next door to the Court House, over Fabnestock's Dry Goods Store,

LANCASTER, PENNA.

*Teeth Extracted without pain by the use of (Nitrous Oxide) Gas.*

**BOOKS AND STATIONERY.**

A Full assortment of

SCHOOL, MISCELLANEOUS AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

**STATIONERY,**

WHICH WILL BE SOLD AT

**GREATLY REDUCED PRICES,**

On account of removal April 1st, 1869, to

**No. 52 North Queen Street,**

(KRAMP'S BUILDING)

Four Doors above Orange Street.

Subscriptions received for all the Agricultural and Horticultural Magazines.

**J. H. SHEAFFER'S**

Cheap Cash Book Store, No. 32 N. Queen Street, LANCASTER, PA.

**C. J. GILLESPIE,**

DEALER IN

**FOREIGN AND AMERICAN WATCHES,**

IN GOLD AND SILVER CASES.

**CLOCKS OF EVERY DESCRIPTION,**

**Jewelry in all its Shapes and Forms,**

**SILVER WARE,** designed for Bridal Presents;

**BRACKETS, TOILET SETS, VASES, SPECTACLES, GOLD PENS, &c., &c., &c.**



# HARDWARE!

## Stoves!

## Cedarware!

## Housekeepers' Furnishing Goods!

The undersigned at their old established stand in  
**WEST KING STREET,**

are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

**The Largest and Best Selected Lot of**

## STOVES,

at Manufacturers' Prices. Also, every other article kept in a first-class Hardware Store.

A FULL STOCK OF

Sadlers', Coachmakers' and Blacksmiths' Tools and Materials.

BUILDERS will find a full supply of every thing suited to their wants at **LOWEST FIGURES.**

**CLOVER, TIMOTHY AND FLAX SEED,**  
BOUGHT AND SOLD.

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GRUGER BROTHERS,

## MARBLE MASONS,

14 South Queen St., Lancaster, Pa.,

Have always on hand or will furnish to order at  
**SHORT NOTICE,**

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We pay particular and personal attention both to the **SELECTION OF THE MATERIAL** and the **EXECUTION OF OUR WORK**, and our facilities now are such that we can guarantee our customers the very best work, at the same, and often **Lower Prices**, than are usually paid elsewhere for inferior productions.

Lettering

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**ELEGANTLY AND CORRECTLY DONE.**

We earnestly invite our country friends to give us a call.

# SHULTZ & BRO.,

Manufacturers, Wholesale and Retail Dealers in

## HATS,

Caps and Furs,

LADIES' FANCY FURS,

## HOODS,

TRIMMED GLOVES AND MITTS,

Gents' Gloves, Capes and Collars,

Fancy Robes,

BLANKETS, &C.

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LANCASTER, PA.

## AMERICAN WATCHES



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NEXT DOOR BELOW COOPER'S HOTEL,

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SILVERWARE,

JEWELRY.

CLOCKS AND SPECTACLES.

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THE UNDERSIGNED REPRESENTS THE  
**BROOKLYN LIFE INSURANCE COMPANY,**  
 AND ALSO THE  
**NORTH AMERICAN**  
**Life and Accident Insurance Company.**

Both stable and well established companies, the former having a capital of \$1000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

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## REED, M'GRANN & CO., BANKERS.

LANCASTER, PENN'A,  
 Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

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Receive Money on Deposit and pay Interest as follows:

1 month,	4 per cent.,	6 months,	5 per cent.
3 "	4½ "	12 "	5½ "

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Chas. A. Heinitsch's Drug Store, 13 E. King St.,  
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## German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

GERMAN VEGETABLE OR UNRIVALLED CONDITION POWDERS

For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hidebound, Loss of Appetite, &c.

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A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

PYROLIGNEOUS ACID.

A substitute for curing Beef, Pork, Hams, Tongues Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

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Old Chairs Re-painted and Repaired.

## CHRISTIAN WIDMYER, CABINET MAKER,

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Cabinet Work of every description and a full assortment of Chairs constantly on hand.

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Book, Job and Newspaper

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OFFERS GREATER INDUCEMENTS

FOR CHEAP WORK,

Executed in the Best Style of Printing,  
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We are now printing *The Pennsylvania School Journal, The Voice of Truth, The Good Idea, The Reformed Church Monthly, The Business Advertiser, The Inquirer, The Mechanics' Advocate, The Lancaster Farmer,* and other publications that will compare with any similar publications in the State for beauty, besides being printed

Cheaper than at any Other Establishment  
 IN THE COUNTRY.

Estimates for Newspapers, Books and jobs of all kinds made and forwarded, and all information gladly given by

## WYLIE & GRIEST,

Book and Job Printers,

Inquirer Steam Job Printing Establishment,  
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**LANDIS & CO.,**  
**KEYSTONE AGRICULTURAL WORKS**

Lemon Street, Lancaster, Pa.,

ARE PREPARED TO DO ALL KINDS OF

**MACHINE WORK,**

**BUILD LARGE AND SMALL ENGINES,**

**SHAFTING, PULLEYS, HANGERS, HORSE & WATER-POWERS,**

**MILL GEARING,**

And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

**LARGE ASSORTMENT OF MACHINERY**

Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works, in which the best work is turned out.

They also announce that they are now prepared to supply their

**NEW GRAIN SEPARATOR**

**TO ALL CUSTOMERS.**

This Machine requires LESS POWER, does MORE WORK, and is considerable CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

Repairing of all kinds promptly done at reasonable rates.

Give us a call, and we will endeavor to please our patrons.

**FRANK LANDIS,**  
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**SIGN OF THE ANVIL,**

No. 8 East King Street, Lancaster City, Penna.

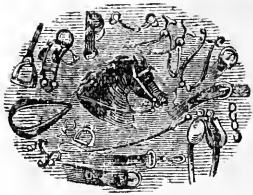
DEALERS IN

Foreign and Domestic Hardware,

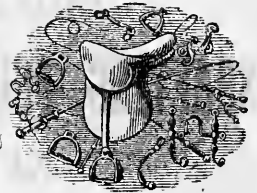
Such as Building Material, Paints, Varnishes, Oils, Glass, Coach Trimmings, Stoves,  
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TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



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**PLAIN AND FANCY**

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**WAGON GEARS, WHIPS, BUFFALO ROBES,**

**BLANKETS, TRUNKS, VALISES, CARPET BAGS, LADIES' & GENTS' SATCHELS,**

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Also, Agent for **BAKER'S HOOF LINIMENT**, the best article for Sore Hoofs in the country.

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**BOOKS, STATIONERY, FANCY GOODS, &C., &C.,**

No. 44, Corner North Queen and Orange Streets,

**LANCASTER, PA.**

N. B.—Any Book ordered can be sent by Mail to any address.

# TO BUILDERS!

## PLASTIC SLATE!!

### The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimonials New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built: stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
7. The testimony of Wm. McGilvray & Co., published herewith, shows that it is not only fire proof externally, but, is also a great hindrance to the spread of fire within.
8. It is much cheaper in first-cost than any good roofing now in use, and when all attendant expenses of the two roofs are estimated, costs only about half as much as the best slate, and it makes a better and closer roof.
9. For the roofing of foundries and casting houses of blast furnaces, where there are gases of a very high temperature, which injures and destroys other roofs, this material is improved and seems to produce a better roof, (see certificates of Messrs. Grubb, Musselman & Watts, S. M. Brua and Wm. McGilvray.)
10. If in process of years cracks or leaks occur in Plastic Slate Roofs, they are about as easily repaired, as they would be to white-wash, needing only a brush and the Mastic, but no expensive labor of mechanics.

☞ The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Offices of the Lancaster INQUIRER and EXAMINER & HERALD.

Persons wishing to examine PLASTIC SLATE ROOFS, and thus verify for themselves the following statements, are invited to call and inspect Roofs put on for the following persons, among many others:

LANCASTER—Thos. H. Burrowes, Stuart A. Wylie, (Editor Lancaster Inquirer,) J. B. Schwartzwelder, Abraham Bitner Sr. MARIETTA—Henry Musselman & Sons, Myers and Benson. COLUMBIA—C. B. Grubb, (Furnace,) Columbia Gas Co., Samuel Shock, Pres't., Susquehanna Iron Company, Wm. Patton, Pres't., Samuel W. Mifflin. MOUNT JOY—Henry Kurtz, Dr. J. L. Ziegler, William Brady, J. R. Hofer, (Editor Mt. Joy Herald). CHRISTIANA—E. G. Boonell, Wm. P. Brinton, John G. Fogle. BART—William Whitson. BELLEMONTE P. O.—Robert P. McIlvaine. PARADISE—Robert S. McIlvaine. WILLIAMSTOWN—T. Scott Woods. EPHRATA—Dr. J. M. Groff. GORDONVILLE—Samuel M. Brua. CERNARVON TWP.—Mrs. Fanny Mast. UPPER LEACOCK TWP.—Marks G. Menger, Christian R. Landis, Jacob E. Musser. LEACOCK TWP.—Isaac Barr, Levi Zook. WEST EARL—Christian Beller. LEAMAN PLACE—Henry Leaman, Israel Rohrer. BRUNNCKVILLE—Aaron H. Bimbaker. SPORTING HILL—Emanuel Long. LITIZ—H. H. Tshudy, David Bricker. DRBLACH P. O., CLAY TWP.—Jonas Laber. MANHEIM BOR.—Nathan Werley, Samuel Ruhl. PENN TWP.—George Ruhl. WEST LAMPETER—Aldus C. Herr. ENTERPRISE P. O., EAST LAMPETER—Marks P. Cooper. STRASBURG BOR.—Hervy Brackbill.

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LICENSE FOR LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

Enterprise P. O., Lancaster County, Pa.

Or A. W. & J. R. RUSSELL, Lancaster, Pa.

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Or JOHN R. BRICKER, Litiz, Lancaster county, Pa.

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# H. L. & E. J. ZAHM, JEWELERS,

CORNER OF NORTH QUEEN AND CENTRE SQUARE, LANCASTER, PA.

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## AMERICAN WATCHES,

MADE BY THE

NATIONAL WATCH CO., ELGIN, ILL.,  
AMERICAN WATCH CO., WALTHAM, MASS.,  
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In a great variety of Gold and Silver Hunting Cases.

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### LADIES' GOLD HUNTING CASED WATCHES.

Prices low and every article warranted to be as represented.

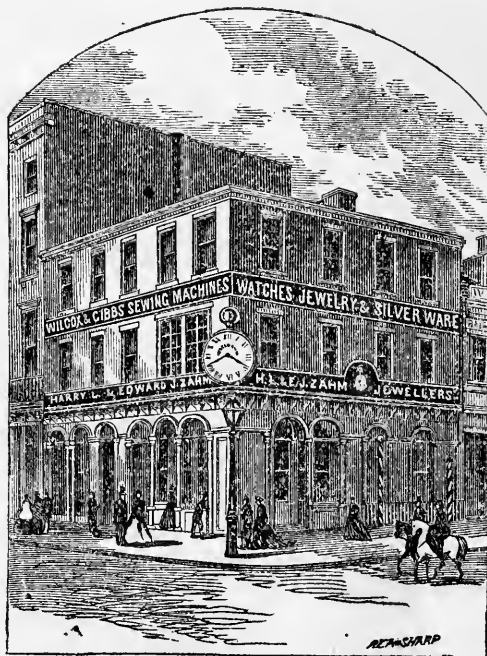
SOLID SILVER

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OF THE BEST QUALITY, IN

TEA SETS, COFFEE URNS, WAITERS, ICE PITCHERS, GOBLETS, CASTERS, SYRUP PITCHERS, PUDDING DISHES, BERRY DISHES, PICKLE CASTERS, COMMUNION SETS, SPOONS, LADLES, FORKS, ETC.



CHAINS, PINS, EAR-RINGS, SLEEVE BUTTONS, STUDS, BRACELETS,  
LOCKETS, NECKLACES, TRINKETS, CARD-CASES, ETC.  
MASONIC MARKS AND SOCIETY PINS  
Made to Order at the Lowest Cash Rates.

A FULL STOCK OF

JEWELRY.

## PERFECTED SPECTACLES.

We are *Sole Agents* in Lancaster for the celebrated PERFECTED SPECTACLES, made by Lazarus & Morris, Hartford, Conn., which embody all the improvements that science has discovered and art perfected. Our experience of twenty years in this branch of business enables us to suit all who can be aided by glasses.

## CLOCKS

Of every description, comprising American and Fine French Time Pieces.

Repairing of Watches and Job Work generally receives personal attention.

HARRY L. ZAHM.

EDW. J. ZAHM.



THE

# Lancaster Farmer

VOL. I.

LANCASTER, PA., FEBRUARY, 1869.

No. 2.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

WYLLIE & GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance,

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

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JACOB M. FRANTZ,  
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All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

All advertisements, subscriptions and remittances, to Wyllie & Griest, Printers.

## Essays.

### A PAPER ON FRUIT CULTURE.

The people of Lancaster county, and I believe of a great part of the eastern counties of our State, have for some years been lamenting the decline in the produce of fruit; especially that of apples and peaches. Of late years pears and cherries have also shown a disposition to decline. Our friend, P. S. Reist, in his essay, read before the "Agricultural and Horticultural Society," and published in THE LANCASTER FARMER, says, "that we may be enabled to produce the abundance which our forefathers enjoyed, is a consumation most devoutly to be wished." This is truly so, and I am happy to see that there is a spirit being aroused in the community, which is making an effort to overcome the difficulty.

The value of good fruit, as a means of promoting health and comfort, gives every man, woman and child in the county a deep interest in its production; and every effort to resuscitate the declining energy of our fruit trees should be fostered and encouraged, until the happy consummation is arrived at.

I was pleased, therefore, to see the issue of the LANCASTER FARMER, which will afford a medium through which our people can interchange ideas

and views on this important subject. I also highly commend the kind and liberal offer of the gentlemen composing the editorial committee, inviting and encouraging our farmers who may be in possession of facts, freely to communicate them for publication; offering to *dress* their communications in such form as to make them creditable, no matter how homely or ordinary the language may be, in which their ideas are couched. This is the right spirit, a d most effectual means of attaining the desired end. Many of our plain Lancaster county farmers, are men of as good natural minds as any in the land; possess sound judgment, and are close observers. They have sufficient education to manage their own business and calling, but have not much experience in writing; and do not like to undertake a thing which would not be creditable. The gentlemen composing the editorial committee, are chiefly their neighboring farmers, to whom they need have no reluctance to communicate their ideas and sentiments. Let every one of our solid old farmers put his shoulder to the wheel, and perhaps the great desideratum may be attained: and if our apples and peaches can not be restored, the best substitute will at least be discovered and produced.

As an encouragement in this direction, I feel inclined to offer a few ideas and suggestions, (mind I don't say *facts*), which, if the committee deem of sufficient importance, they are at liberty to publish. But I desire to remind them, not to forget the *dress* they promised.

That effect will follow cause, is a law of nature; and every effect must have its cause. If we understood all the operations of the law of nature, perhaps there would be but one prime cause, which produces a particular effect. But there are to us apparently, a variety of causes required to produce certain effects which we observe. The abundant yield of fine apples which we formerly enjoyed, required for its production certain elements in the soil where the trees grew, as one of the causes of their production. But there were other conditions and circumstances operating with and favoring that of the elements in the soil, all of which had to act harmoniously, or in

concert, in producing the effect of these fine crops of fruit. This production then was the effect of different causes, operating in harmony with each other.

The fruit crop is now a failure, and we conclude that some of the causes which formerly existed must have ceased, or else some counteracting influence has disturbed the harmony with which they formerly acted together.

We had long and happy enjoyment of one effect, with little knowledge, thought or care, of or about its cause. We are now having painful experience of a different effect, in which we seem to be as yet equally ignorant of its cause, but are all anxious for a change in the effect.

We have been waiting for a considerable time, hoping and expecting to see a change in this effect spontaneously wrought; until we begin to despair of the end being attained without means to work this change.

All will readily admit, that the first and most important object is to ascertain the cause of the new effect. This then should be our first inquiry. In this inquiry I have no doubt, but different observers have arrived at very different conclusions, in regard to this cause. Our constitution is such that when we are impressed with an idea, we are intent on observing such facts as are connected with it, and truths equally apparent are not observed by us. Now if these different impressions or ideas are brought together and compared, if we cannot thereby arrive at correct conclusions, they may at least be wholesome.

I feel some diffidence in presenting objections to ideas which have been advanced, because I know they are entertained by very able and close observing men, for whom I entertain a very high regard; but free discussion is the only means of eliciting truth.

The idea of "cold winters" has been advanced as a reason for the failure of fruit. But we had equally cold winters when fruit was plenty. Old fashioned winters, is quite as familiar an expression as old fashioned fruit crops. Besides further north, where it is colder than here, they still enjoy abundance of fruit. The variable temperature of our winters is also advanced as a cause, why fruit does not do well with us; but those amongst us who have lived to be three-score, or three-score and ten years old, can remember that we had equally variable winters when fruit failure was rare. This then cannot be the cause, or the effect would be the same one time as another. The clearing of our forests is also very commonly held as being the cause of failure. But this clearing has not been as sudden as the failure in the fruit. Very large portions of our forests were

cleared long before there was any diminution observed in the production of apples. It is recommended to plant trees and screens of evergreens. I am not without hope that benefit may accrue from this, but cannot think that the want of trees is the cause. In the west where there is comparatively few trees or screens, but open prairies of vast extent, there is still abundance of apples.

Our friend Reist in the essay alluded to, attributes the failure to the exhaustion of these elements in the soil, which are essential to the production of fruit. I observe also that in a conversation, or discussion had in the "Agricultural and Horticultural Society," as published in the *Express*, the partial failure in the wheat crop of late years, is attributed to the same cause.

We know that the elements in the soil must be dissolved by the fibrous rootlets, before they can exert any influence on the plant, or its fruit. This element, be it abundant or scanty, is carried by the sap vessels to every part of the plant, in equal proportion. There is no election either by the element, or any part of the plant, or its fruit. If the element is deficient, the whole plant with its fruit will alike betray its want. Years ago, when the ravages of the Hessian fly was so destructive to the wheat crop, the elements necessary to the production of a full crop were as abundant in the soil as they ever had been; but the insect operating upon the roots of the plant, prevented these elements being conveyed to the plant in sufficient quantity to produce a strong, healthy stalk, and full, plump berry. The grains were small, and shriveled in proportion to the deficit in the elements which were received by the plant. The same effect is observed when the roots of a tree are mutilated. The want of the elements is perceptible in the whole tree, and its fruit alike. When rust, or mildew, infests wheat, the stalk is perfect; elements may be in abundance, but the parasite, fixing on the stem, absorbs the elements and thus cuts them off, so that they do not reach the grain in sufficient quantity to produce a full plump kernel.

The wheat fields have seldom presented a more promising aspect than they did last year. Fine healthy stalk, fully developed heads, bright and clean straw; all was perfect but the quantity of grain. In the same head there would be observed very fine full and plump grains, with others more diminutive and shrunk, and some altogether (what is called) deaf. I can not reconcile this with the idea of exhaustion of elements in the soil. The same may be observed with regard to apples and pears. Our older citizens will remember the perfection, beauty and excellence of the old Vandever, Carthouse, and Bellefleur apples,



and White Dayenne pear. When the fruit began to fail, the trees evinced no evidence of decline. Nor do I know that even now they are not as healthy and vigorous in appearance, as any of those which are yet fruitful. Nor was all the fruit defective. Some specimens were for a long time as perfect as ever, and we still find some good specimens of fruit amongst the abundance of knotty and scrubby stuff. They are usually one sided and knobby, to a degree that makes them worthless, if they do not rot or drop off prematurely. The luscious White Dayenne pear tree grows and flourishes about as well as ever, blossoms as profusely, and sets its fruit as well as ever, but before its maturity it becomes black on the surface, cracks open, and becomes altogether worthless.

Now, these are not the phenomena we witness where there is a defect in the elements of the soil, or from exhaustion, but rather of some disease or agent exerting an influence on the fruit alone, and preventing the development and maturity of the fruit, despite the abundance of, and full absorption and use of the essentials in the soil.

If the defect were owing to exhaustion of the elements in the soil, the effect would not be so general. New land would be exempt, and would for years produce abundantly, as did cleared land in former times. But experience proves that it is but little, if any more, fruitful than the old land. Where there is long continued cultivation of the same crop, on the same soil, there is usually a diminution in the yield of fruit, even though the ground is thoroughly cultivated and manured. This is usually attributed to exhaustion of the elements in the soil, which is necessary to the production of this particular plant, and its fruit. This I esteem *partly* true, but not necessarily so. The necessary elements may exist in the soil, but other elements may exist there, which by their operation on the first, may neutralize them and make them nugatory. I believe agricultural chemistry has discovered that the fibrous rootlets of plants do not only *absorb* from the soil in which they grow, but that the plant also throws off certain excrementitious matters, by exhalation through these rootlets, which if retained would be deleterious to its health and growth. By long continuance of the same plant in the same soil, this effete matter becomes so abundant, as to exert a noxious influence on the plant, and it becomes weak and sickly, with diminished production of fruit. To other plants of a different nature this effete matter is a fertilizing element, and is taken up with avidity; the soil is purified and rendered favorable for the production of the first plant again. Hence the advantage of prudent

rotation in crops. We hear of them cultivating corn for many years in the same field in the west, without any diminution of yield, and this might be urged as objectionable to this doctrine. I conceive that the fact only proves the excessive fertility of the soil. Those who boast this, say nothing of the crops of smart weed, and Spanish needles that grow along with their corn, by which this effete matter is absorbed and carried off.

It will be observed from what I have already said, that I view the effect as being caused by disease, chiefly of the fruit itself, and may also be owing in part, to disease of the leaves of the trees; or perhaps what I here term disease, might more properly be called fungi or parasite. These being fixed on the fruit, absorb the juices or elements within their reach, and arrest its growth. Such fruit of the same tree, or such parts of the same specimen, as are free from any such attachment, grows on not at all hindered, or only partially so, from full development and maturity.

Our friend Reist observes that he has no particular remedy to point out, by which the desired end may be obtained; and I am sorry to say that I am as little able to recommend means to its attainment as he. I think, however, we are not without hope—that we may yet be relieved of the evil under which we now labor.

The idea which presents itself to my mind is that the disease or agent is conveyed by the atmosphere. There may exist in the atmosphere elements which produce disease of our bodies, which are not perceptible to our senses, and why not effect plants as well? Those of our friends who are old enough, will remember that from about the year 1816 or 18, to the year 1831 or 2, we had regular annual visitations of autumnal billious fever, intermittent fever, and ague; which caused great distress throughout this and many other districts of country. Whole families often lying at the same time, with scarcely one able to minister to the wants or necessities of the other. On the streets and highways, we would meet faces pale and haggard, who for weeks, months, and even years could not get relief from the *plague*, since the year 1832, our country has been comparatively free from this form of disease. True, there may have been localities which occasionally suffered more or less, but as a general epidemic the country has since been free. Since then other diseases have prevailed epidemically for a season, and again disappeared. Sometimes almost every person has influenza, cold,\* or snuffles. Why is this so? Since the prevalence of the epidemic noticed above, we have all had the pneumonia and vicissitudes in atmospheric change, as heat and cold, drouth and moisture, floods and storms, but

no fever! There was no perceptible difference in the air we breathed, but it must then have been charged with an agent which produced an effect from which it has since been comparatively free. At other times it must have been charged with something of a different nature, as it produced a different disease. Whatever the deleterious agent is by which these different diseases have been produced, I cannot account for its simultaneous appearance over so wide a district of country, except that it has been conveyed by the atmosphere. The effect on the fruit and wheat, has also been simultaneous over a large district which could scarcely have occurred by exhaustion of the soil, and seems to me most reasonable that the agent is conveyed by the atmosphere.

I am not, therefore, without hope that as epidemic diseases of the human body change and disappear, so this disease of plants may also in time disappear; or the great dispenser of good to man, may reveal to us a remedy by which to overcome the difficulty.

There are still some varieties of apples which yield tolerably well. So far as I know, the foremost amongst these is the Fallow-water, or Pound. They are perhaps not quite equal in flavor to some others, but in the absence of better, are most acceptable and delicious. I have several trees in my orchard which have not entirely failed to bear in fifteen years, and have frequently had full crops of very perfect fruit. There is an apple called Nedley, which some of my neighbors say produces very fair crops quite regularly. I have several trees of the old sweet pippin, which bear regularly every second year, and very perfect fruit. Their chief value is for cider and apple butter. Of the latter, these two trees have kept the table of our family pretty well supplied. The only remedy I have to suggest, is to plant freely of those varieties which are known to do best in our own neighborhood; even if they are not quite equal to some others we have seen or heard of. A tree with medium fruit is better than that with none. Sow also the varieties of wheat which proves to be most productive. Experience may teach us whether early or late sowing is most advantageous, and also the value of agents which have neutralizing effects. It behooves us therefore to be observant of the influence of remedies and means, until we have surmounted the difficulties under which we now labor.

The two last seasons we had very protracted rains about the time the apples were in bloom. This occurrence is detrimental to almost every kind of fruit or grain. It probably occurred as often years ago as now, and has nothing to do with the subject under consideration. It was accidental, and may, or may not, occur soon again.

PEQUEA.

## VEGETABLE PHYSIOLOGY.

The science of Physiology embraces so much that is instructive and interesting, that, unless it is made exhaustive, it is a difficult task so to popularize any of its branches, as to render it worthy a place in the columns of a journal designed for promiscuous reading.

That branch of the science to which we design calling attention, is that which relates to the vegetable kingdom. It comprises the endowment of vegetation with organic life, and the fulfillment of the purpose for which it was constructed.

Its position in the sciences, and the world of nature, is a central link between the animal and mineral kingdoms, and constitutes a grand chemical laboratory which gathers nutriment from the earth, and prepares it for the food and development of the animal creation.

There is so little similarity between a lump of clay, a head of cabbage, and a piece of meat, that it becomes intensely interesting to understand how the one can be transformed into the other, and all bear so important a part in developing the highest and most complex organic structure the world contains—the living, moving, *thinking man*.

Science may account for results, and discover certain remote causes for the phenomena of vital power; but that grand principle which moves inert matter to an affinity with certain chemical combinations and forces, that nicely balanced aggregation of laws which gradually raise universal nature from the torpor of mid-winter into the rising, budding beauties of spring, thence into the full bloom and vigor of summer, where it reaches the highest point of organic perfection, luxuriating as it were upon the stimulating influences of the elements around, until the modified and restricted powers are exhausted, to gradually wane and sink into the substantial fruits of autumn, and again into the gloom of winter—must ever remain a *mystery*.

The idea of chemical changes in the mineral substance of our globe, must rest upon certain conditions which give expression and force to the laws by which all organized matter is governed. Through the agency of those laws the highest nature of the mineral kingdom reaches toward the lowest principles of the vegetable; and then as the vegetable rises to a higher and more complex scale, under the endowment of organic life, it meets the coarser functions of the animal, and thus the three kingdoms, comprising the three great divisions of nature, are bound into one universal, organic mass.

The laws which are peculiar and fundamental to inert matter, are those of affinity and cohesion.

Those which characterize organic matter, and govern, for the most part, the lowest forms of such matter, are *re-production* and *change*. Upon the great bosom of the earth, these laws find their ready solution, and the power which renders them capable of drawing together the elements of vitality.

Apart from the chemical principles and laws by which this vital endowment is effected, there are certain elements which are essential and fundamental to all organized bodies, but which we design applying to our subject of *Vegetable Physiology*.

The first of the elements referred to, is a "*definite living origin*." Its existence and life, whether animal or plant, must possess similar antecedents to its own peculiar life to give it a type, or species, by which it obtains a definite perennial succession. It must have a parent of its own kind; must attain maturity, decay and die, after the manner of the being it represents. To carry forward this idea of a special and distinct individuality, there are other elements involved which are embraced in the idea of a "*special and definite form*."

Throughout the entire vegetable kingdom this peculiarity is apparent. Every plant and flower, every tree and fruit, represents its own genus and species, and draws its vitality from the conditions of nature which distinguish it from *every other form*.

A "*definite size*" forms the third element which characterizes the individuality of organized bodies. There may be dwarfs, but they are the exceptions to the general rule that fixes the restrictions of nature, which bind all living things to the modified conditions of this unerring law.

The fourth element essential to organization, and which not only regulates the first principles of intercellular tissue, but determines the arrangement of fibres and consequently the identity of the fabric, consists of a "*definite and peculiar structure*."

From this elementary principle, which is regarded as primitive in its character, we pass onward in the scale of organic structures, and as the process of development is traced to its ultimate destination, the other elementary principles, which are embraced in *nutrition*, the *nutritive fluids*, *dependency*, and finally in *limited duration*, become subjects of the highest moment and interest. "There is in every organic fabric a necessary connection between its conformation, and the action it is destined to perform."

This idea runs through the entire scheme of organized matter, influences the purposes of nature, from the germ, throughout all the vegetable creation, until it reaches the towering oak. Or

from the cell of microscopical science, through the animal kingdom, until it culminates in the relation of each organ with the other, subject to the will-power, in the living man.

In order to facilitate the study of vegetable physiology, and systematize the arrangement of our *subject*, we will divide it into three distinct parts or divisions, and treat them, as best we can, according to scientific principles. The principles embraced in these divisions, are applicable alike to animal or vegetable physiology, and, of course, will apply to the subject in hand.

1st. The formation of an organized body, as developed by the cell system of microscopical science.

2nd. The principles which govern the growth, or contribute to the perpetuity or continuity of vitality in the plant.

3d. The laws of restriction and decay, which are peculiar to all organized matter.

The subject of our next communication, therefore, will be, the remote principles of life, or cellular tissue.

S. W.

#### WHY IS THE COUNTRY DESERTED AND THE CITY THROGGED BY YOUNG MEN ?

It is so, and there are numerous and sufficient reasons for it. It will be the purpose of the writer, who speaks from actual experience, to enumerate some of the principal reasons or causes of this cityward tendency, and to suggest a common-sense remedy for it.

The city is more attractive to the young than the country, because the beauties and attractions of the country are not properly presented to the youth of the country, to instil and cultivate in their minds a love for nature, and rural matters of beauty and interest. Parents in the country, in the farming districts, are drudging in their respective departments from early morn till late at eve, and many rarely see their children except at meals, where they are scarcely cognizant of their presence with them, so great is their haste to return to *work, work, all work*; no rest, no recreation; no pleasure in anything but *gain*.

While the children are small and unable to participate in drudging in-doors or out, they are driven to the district school, a place as unattractive to a child usually as a refrigerator is to a rat. A teacher is hired and is to be paid, and the plodding mother says she has no time to take care of the "young ones;" "we have got to pay the teacher, and he or she (as the case may be) may mind 'em; that's what they are hired for." But as soon as they reach an age that they can be of any service, in-doors or out, they are withdrawn from the school, so-called, and yoked into the drudging of kitchen or field, according to the sex, there without cessation to plod and delve till they reach their majority, unless perchance they happen in marketing some product of the farm, to get a peep at what is to them "*the prettiest thing in the world*," the city. There they see young men

and young women "in Sunday clothes every day," with complexion fair, and hands white and soft. "How nice!" what a contrast when compared with the life they have been living in the country, and with their condition.

The question naturally arises in their minds, why can I not live in the beautiful city too, and enjoy some of the luxuries of life, instead of living as I am living, and as father and mother have done all their days.

These youths have been bred in utter ignorance of every feature of loveliness with which the country abounds, for the enjoyment of those who have been so educated that they can appreciate the exalted order of enjoyment there to be found.

No effort has been made to make the work they are required to perform, or their scholastic instruction that they have received, in any way interesting; on the contrary, all is monotonous and wearisome, and in no way calculated to meet the wants of a youthful mind, but so repulsive that the first opportunity that offers to escape this unnatural ordeal it is embraced, and without waiting to consider the propriety of the contemplated change, which in fact they have little capacity to do, for they are as a natural consequence of the manner in which they have been reared, the merest children mentally.

All will admit that reform is necessary, but how shall it be effected? We can reach the case in no other way than through the country school. The parents are generally incompetent to the task, or too much engaged in business. The work of reform is to be done through the State Superintendent, the School Commissioners and the Teachers, hence these are very important offices, and should be held by the best men in the country. These are the men who are to mould the minds and tastes of those who are to be the parents of the next generation, and if the system of education in the common schools and in the farm schools of the country are made what they should be, it is practicable through them to effect reform that will not only correct the evil above alluded to, but numerous others equally essential in promoting the general evil.

The public mind can be reached through the properly-directed efforts and reports of the State Superintendent, and by the personal efforts of the School Commissioners in their respective localities, by their faithful and sagacious co-operation with competent teachers, whose selection and direction they should have full power to control. Instead of the least competent teacher being sent to a rural district, the very best, most intelligent and those possessed of the most powerful moral influence, should be selected for those particularly deficient districts, in order, with all possible dispatch, to elevate them to their true status in point of proper scholastic training.

Every branch of the boasted common school system in every State and county with which the writer is familiar, is still very defective, and demands immediate reform; the same also may be said of all the State Agricultural Colleges. Who can point to anything that has emanated from these well-endowed State institutions that has contributed to the general advancement of the great national interests they were designed to foster, cultivate and perfect if possible?

I have looked with interest from time to time for the appearance of an account of some useful discovery that had been made in physical science or in rural economy, in the reports of the numerous State Agricultural Colleges of our country, but in vain. I have yet to see, or hear, of the accomplishment of anything commensurate with the appropriation for their endowment and support. In all my travels in rural districts, in which I drive annually from 4000 to 6000 miles, I have not yet met with any new system of culture, or new modes of manipulating soils, or applying fertilizers, or labor-saving machines, or vehicles, or any new grain, of grass that had been tested at an Agricultural College and found worthy of general introduction by the practical farmer. In some States—in Maryland, for example—those who control and direct the public school system, require a certain model, or plan of a school building, and a certain regulation of desk and seat, which latter by the by, is, I believe, the most perfect of anything of the kind in use in any country. I think it is called "Saper's patent desk."

I wish the same could be said of the regulation plan for the school buildings, for they are in the opinion of the writer, still very defective, in very many particulars.

In some rural districts the number on the school roll is two or three times greater in winter than in summer, hence it is highly important that the school-building should be constructed to provide particularly for the comfort and health as well as all other requisites, of the large number of the winter sessions. This is by no means the case. There is, in many instances, an insufficiency of room to seat comfortably the regular attendants. The building is not unfrequently built upon piers or piles, is entirely open underneath, hence as everybody knows, or should know, it is utterly impossible to heat a room thus arranged with the ordinary floor, so as to be comfortable at the floor, without an excess of heat at the height of the head of a person in a sitting posture; consequently in all cold weather there is not only intense suffering from cold feet, but from roasted heads. The mode of heating is by direct radiation in all such cases, as no other is practicable, and if there is provided any means for ventilation or change of air, and it is adjustable, it is closed to retain all the heat that can be generated, in order to heat the floor as nearly as possible. The result is, that in the coldest weather, where the school is most crowded, the air is most vitiated and most uncomfortable. The school-house is not unfrequently located near one end of the district, and perhaps on a by-road, instead of being central and on the most public thoroughfares within the district, as it should be. It is also generally located on a lot that is worthless for other purposes, often only large enough for the building, and room to deposit a load or two of wood. The building is perched upon a precipitous bank, or in a low basin, and all its surroundings and appurtenances of comfort and necessity are equally unadapted to their purposes.

The requirements are, a lot of at least two acres, pleasantly and centrally located. It should be somewhat above the grade of the road opposite it. The site for the building should not be

less than one hundred and fifty feet from the road. The soil should be rather dry, and fertile, and adapted to the growth of trees, shrubby and flowers, a variety of each of which should be planted and cultivated. The grounds should be enclosed, and be kept by the pupils under the direction of the teacher, who should be aided and encouraged by the trustees of the district, who should give him every appliance needed, among which nothing is perhaps more essential than a good and sufficient rain-water cistern, with which to supply the pupils and the plants. No tree should be planted so near the building as to shade it only when the sun is near the horizon.

The sun should not be excluded only by inside blinds or shades, which should be adjustable, that the sun light may be admitted in full strength when it is not objectionable on the desks.

Sunlight is indispensable to health. There is truth in the old proverb, "Where the sun is excluded the doctor must enter." The walls of the building, if of stones or bricks, may have running vines, and a good variety of them, trained on them, without any injurious effects on the building or occupants, as the effect is to make the walls dryer instead of the reverse.

Beating rains are thrown off by the foliage, and the roots and feeders of the plants will absorb all moisture from the walls that may reach them through the foliage, besides the wind will rapidly dry it out.

The pupils should be instructed in the nomenclature and habits of trees, shrubs and flowers. This knowledge they will continue to cultivate and develop at their homes, and soon a strife to excel in the decoration of their homes, in which in some instances the parents, hitherto entirely ignorant of the subject may become interested, and a cultivation of taste in this direction may become quite general. The best agricultural journals of the day should be taken, also some devoted to floriculture should be taken by the trustees for the use of the school.

The preceptor should read and explain such articles as are adapted to the capacities of his pupils, as this will enable them to comprehend such practical reading matter as will diffuse general intelligence in these directions.

The preceptor should also endeavor to place such reading matter in the hands of his rural patrons, and impress on them the importance of giving their children some time for reading, and the character of cultivation of which I have spoken, and in every practical way endeavor to impress upon the parents the importance of doing everything reasonable to interest their sons particularly in rural affairs, and induce them to allow the youth sufficient time to cultivate their minds, and matters of ornament and decoration in the vegetable kingdom. By this means, and more effectually than by any other, will a taste for rural life be inculcated and the desired object be attained, of giving the young agriculturist a proper estimate of his calling and an honest pride in reference to it, which they will naturally desire to infuse into the minds of their children, and thus promote and perpetuate the work of reform, by making the life of the farmer dignified and attractive, and more and more so with every generation. The city, then, will have but little power

in seducing them from God and the country.

AN OLD FARMER.

The above, taken from the columns of such an able Family and Agricultural paper as the *Germanantown Telegraph*, is a sufficient warrant for its appearance in our journal; particularly as we believe it is in the main, as applicable to this locality, as to the one in which it was originally published. There is, however, two sides to the question, if not more, or perhaps rather two aspects or more of the same side. There *does* seem to be an overweening desire on the part of young people raised in the country—and many of the old ones—to become residents of the cities and larger towns, whilst very many of the inhabitants of those cities and towns, are themselves yearning for the quiet comforts of a home in the country. Cities and towns also seem more accessible to denizens of the country than the country is to the denizens of cities and towns, and hence the latter are overstocked with tradesman and working people, which makes competition great, labor scarce, and profits low, as well as rents and living high; whilst the country itself suffers from a want of cultivators, crippled energies, and diminished productions. We are often not only astonished, but pained, to see the hardy young men of the country exchanging their healthful, peaceful and profitable occupations, for the very precarious and dubious occupations of the towns—occupations too, in which they have hitherto had no experience, many of which are mere glittering baubles, and altogether uncertain in their pecuniary results. And then, too, in nine cases out of ten, their selection of associates and confidants in the towns, are ill-advised, and morally and physically unprofitable, simply because they forgot the Scripture injunction of "Judge not from appearances, but judge righteous judgement." But this does not apply to the *young* people of the country alone; many of those advanced in years, who have amassed an easy competency for life, and to whom daily exercise and fresh air have become a second nature, leave their ennobling professions, and desert the scenes of their youth and early manhood, for the noisy, crowded, dusty and unhealthful city, where a life of apathy and inactivity, with their natural concomitants, often send them to premature graves. How much better it would be to remain in the country; to divide their large farms into smaller ones; to give them more thorough cultivation; to drain, plant, and beautify them; to make them attractive, as well as profitable; and to advise and guide with patriarchal counsel their children and their children's children. There is wisdom in the old "saw" that "man made the town, but God made the



country," and, all other circumstances being equal, there is just as much difference between country and town, as there is between the works of God and those of man. Horace Greeley, with all his success in life as a printer, in his recent work—*The Recollections of a Busy Life*—makes this most emphatic and unequivocal statement: "Were I now to begin my life anew, I should choose to earn my bread by cultivating the soil. Blessed is he whose day's exertion ends with the evening twilight, and who can sleep unbrokenly and without anxiety till the dawn awakes him, with energies renewed and senses brightened, to fresh activity and that fulness of health and vigor which are vouchsafed only to those who spend most of their working hours in the free, pure air, and renovating sunshine of the open country." Contrast this with a recent statement of a New York paper, that there are over a hundred thousand people in that city, who are compelled to make their living this winter by begging, borrowing and stealing, which are too frequently but the prelude to those systems of fraud, prostitution and murder, which often disgrace the chronicles of the larger cities.

It is true, that cities have their legitimate attractions, beauties and uses, and the wretchedness, crime and suffering which are often found in them are not the arbitrary consequences of an agglomerate population; but a redundancy destroys the healthy balance between consumers and producers, and therefore the fruits of such contingencies must ultimately manifest themselves in some form of evil. Under the most favorable circumstances, those who have been brought up in large cities, and who seem to be prospering there, have nevertheless many trials, deprivations and heart-aches, that are altogether unknown to the rural homes of the country people. Labor, even tolerably hard labor, is not the evil thing which many permit themselves to regard it, especially when it is relieved by intervals of innocent and elevating recreations. A judicious and wise system of labor is one of the means, in the order of a beneficent Providence, for the development and regeneration of the human family.

If the country, therefore, needs additional attractions to prevent the alienation of its people, we would urge all who have ability, opportunity and authority, to give their serious attention to the suggestions of "*An Old Farmer*," contained in the foregoing article, as embracing matters worthy of the candid consideration of any class of readers. They may not be *all* that is needed on this interesting and important subject, but they may elicit *thought* which may ultimately culminate in *acts*, in the right direction. s. s. r.

## Agricultural.

### ROTATION OF CROPS.

It is generally conceded by most intelligent cultivators of the soil, that a rotation of crops is the better course in order to insure success in the art of husbandry.

The present or general Pennsylvania system seems to be undergoing a change which no doubt will be an improvement.

Farms generally are divided into six fields with the following rotation: Sod is ploughed for a crop of corn, which is followed with one of oats, after which it is well manured and the same fall sown with wheat, followed by another of wheat without manure and sown with grass, generally timothy and clover, which is the first season mown for hay, and the second taken for pasture; then again in corn, which makes the same rotation every six years, having each year one field in corn, one in oats, two in wheat and two in grass. In some parts of the State, different methods have been pursued for some time. One of which is to haul the manure on sod for a crop of corn, which, when sufficiently mature, is cut off and either hauled into an adjoining field on shucks, or set against a fence to cure, or else set in rows of shucks in the same field as far apart as is convenient to carry the corn, then it is plowed and sown with wheat, except where the rows of shucks stand, which strips are sown after the corn is husked, or left until spring and sown with oats.

The same field is followed with a crop of wheat and sown with grass, and left two years as in the former method, when it is ready for corn again. Making a rotation every five years—having one field in corn, two in wheat and two in grass.

A third method is to divide the farm into four fields: First corn, next oats and generally some potatoes or other crops, manured and sown with wheat in autumn and set with grass, which in this case is left but one year for hay and a portion temporarily fenced off for pasture, or mowed and fed green instead; then it is put into corn again, which makes a rotation every four years—having one field in corn, one in oats &c., one in wheat, and one in grass.

Each method having its advantages and disadvantages, it is difficult to determine which is best. No doubt the quality of the soil should be considered in connection with the different methods. The advantage of the two former methods are, it gives the fields two years' rest while in grass, provided it is clover, for if in timothy, it can hardly be considered rest, and consequently no advan-

tage. If there be a mixture of both grasses, the advantage will be in proportion to the amount of clover.

The disadvantages in the first and second are two successive crops of wheat in the rotation, which in the one case is a crop for every three years, and in the other one for every two and a half years.

In the first case an additional crop of oats is taken off, which is considered nearly as exhaustive as a crop of wheat. The second avoids a crop of oats but exacts two crops of wheat in five years, with the laborious job of hauling off the corn and fodder for the purpose of seeding, or of hauling over the young grain to remove it when left in the field, and of plowing and sowing the strips with oats in the spring.

The last method has the disadvantage of but one year in grass to rest, and the necessity of sowing more into oats than farmers are generally disposed to sow. The remedy for the latter, is to plant a part of the field for oats with potatoes or other summer crops. The advantages are, 1st, in having the farm in four fields, a large proportion of fencing is saved, which is quite an item at present. 2d. A regular rotation of each crop every four years, without a succession of the same crop, which will naturally make our wheat crops more certain and of better average quality. For by growing two successive crops, the second is generally grown without manure, and consequently usually of inferior quality and always less in quantity. We see, therefore, that the latter system has also the important advantage over both the former in having the manure applied to the only wheat crop in the rotation, which should have the preference, if any is given; it being considered the staff of life.

The object of the farmer, however, should be to bring each crop to as great perfection as possible, which is more easily accomplished under the latter than with either of the former systems. We, therefore consider, as a general rule, the latter system preferable to any other now practiced in this section.

The intelligent farmer, however, will be able to decide what course to pursue with regard to his soil, situation, &c.

H. M. E.

THE Programme for 1869, of the "Experimental Farm" at West Grove, Chester County, Penna., came to hand too late to give an extended notice of it in this number of our Journal, but we will allude to it in a future one.

## NORWAY OATS.

EDITORS OF LANCASTER FARMER: Having examined this grain, I will give you and your readers the benefit of my knowledge on the subject.

This grain has been most extensively and persistently advertised, evidently at enormous expense, and every reader of agricultural papers is no doubt familiar, if not with the grain, at least with the wonderful qualities claimed for it. Those persons in New York, who now have it for sale at \$ 10 per bushel, say, "their investigations and experiments have been conducted, not wholly in the interest of a selfish and profitable speculation to ourselves, but more especially to discover if it were possible to benefit the farming community, and the country at large." [The italics are ours.] They say further, "the Norway oats will yield from 100 to 150 bushels per acre, heavier and better than any other oats known."

As we have invested lightly for the purpose of informing ourself as to this new speculation, we will give the readers of the LANCASTER FARMER the benefit of our investigation, just so far as we have gone, not yet having seen this—said to be new grain—growing.

When at the State Fair, at Harrisburg, last September, we noticed a large number of sacks of wheat, rye, barley and oats, in bags of a bushel each. We will only notice the oats. There were three bags, one of Norway, one of Surprise and one of Brunswick oats, standing side by side. Curiosity tempted us to test the weight, simply by lifting. On lifting the Norway first, we thought it might possibly have the standard weight of thirty-two pounds, and nothing to spare. But on lifting the Brunswick and Surprise, we were surprised to find both these varieties so much heavier, so much so, that we judged full one-eighth to one-fourth heavier than the Norway. A gentleman who was with me, and who follows the milling business, fully agreed with me as to weight, and added that he considered that Norway oats had very little flour—and he would not want to buy it—the grains were too long and thin; too much husk or skin. It might be supposed that this sample on Exhibition at Harrisburg, might not be the genuine Norway, but only the common black oats. To satisfy ourselves fully on the subject, we sent the agents \$2, and received by mail a package marked two quarts. This sample is identically the same with that on exhibition at the Fair. On measuring this sample sent us, we had two quarts and three-fourths of a pint. By weight we had one pound and thirteen ounces. Calculating from this sample, what would be the weight of a bushel, allowing thirty-



two pounds as the standard? This remarkable Norway oats—that is to produce from 100 to 150 bushels per acre, and to weigh forty-five pounds to the bushel as advertised—weighs just twenty-four and eleven nineteenth pounds per bushel. As they sell by standard weight of thirty-two pounds per bushel, it shows plainly that they had to make it up by measure—adding three-fourths of a pint to two quarts to reach even the thirty-two pounds by weight.

Further comment is unnecessary. If persons, after reading this exposition, feel inclined to test this wonderful grain, let them invest. We shall sow our sample, and test its wonderful properties further.

J. B. G.

## Horticultural.

### THE CULTURE OF THE PEACH.

The main obstacle to be encountered in the successful cultivation of the peach, is a disease to which the trees are liable, and to which the name of "the yellows" has been given. Many superficial observers suppose that the unhealthiness of the foliage which becomes so apparent when this disease makes its invasion, is due to an injury at the root of the tree, committed by a worm well known to attack it occasionally near the surface of the earth. But in many instances the conjecture is an error. If that worm were the only enemy we had to contend against, the remedy would be simple enough. A few moments attention, once or twice a year, at the proper time, would easily destroy that foe. The evil we have to contend against is of a more serious nature, and so destructive has this malady become, that if one now wishes to see an old peach tree, he has to travel long and far.

It is scarcely necessary to describe the symptoms of this disease, for who has not seen the trees with small and yellowish, instead of green leaves of the full natural size? The fruit wilts and ripens prematurely and without flavor, and after lingering for a time the tree dies.

Some have supposed that the soil has become exhausted of certain ingredients necessary to its sustenance, and without which it cannot thrive. Others that bad culture and neglect have enfeebled the stock; or that its early death is caused by hereditary taint. Both may be to some extent true.

So far as the disease is owing to hereditary transmission, it would be easy to procure seed from localities where the malady is not known; or to obtain healthy buds for the purposes of propagation. But this has been tried many times, and

nevertheless the trees get sick and die prematurely.

Again there are spots of ground yet to be found where peach trees have never been planted; or even that have never been cultivated at all, and yet if a tree is planted in such places it is not exempt from the yellows; although it must be admitted such trees usually live longer than others planted in ground which has been long under cultivation. We must therefore look for the cause elsewhere.

Our observations for some years past, and especially the last two years, have fostered a conviction that unpropitious weather during the spring months of April and May, is the leading agent in the production of this malady. As we have before stated, there may also be other influences at work, but this we believe to be the first and principle one. The peach tree is a native of a more genial climate than ours, and flourishes better in a dry than a humid air. In former times, when it thrived so admirably here, it had a virgin soil to give it superabundant health and vitality, and it had a climate sheltered by woodland. No doubt, since then modifications of climate have taken place; such is the opinion of many careful observers, and in fact, the conjecture becomes more than probable when we reflect that other fruits—apples, pears and cherries—are not now produced in the same abundance, nor with the same certainty that they were forty years ago. In what these changes consist, we are not prepared at present to state in detail, but we are forced to recognize them from their effects.

To make our position more clear, let us recall some of the facts which claimed our attention during the course of last spring and the spring before. In the first few weeks of April the weather was sunny and uniformly pleasant and moderate; the young leaves put forth, having that dark hue, which unmistakably indicates health. Before, however, they were fully formed, the weather underwent a great change; it became cloudy, rainy and cold, and these untoward features continue to be characterized it without intermission for several weeks. It was not more than ten days after this change, when the incipient leaves, yet too tender to endure this protracted spell of dismal weather, began to lose some of their color; and presently they became pricked and had a mildewy appearance, and this finally proceeded to such a degree that their texture became disorganized, and they dropped off. The young fruit which had set during the fine weather and was of some growth, now became stationary and could be seen studding the naked branches. Most of it dropped off, but some continued to adhere until after many days leaves commenced to put forth the second time. The new foliage expanded very

slowly, and had the signs of feebleness and ill health for a long time. The trees had manifestly received a shock from which the recovery was uncertain and tedious. Some did not recover altogether but took on that appearance which we see in trees that are said to have the 'yellows.' Their fate was sealed. Others, and this seems to us the strangest fact of all, recovered entirely their foliage on some limbs, while other limbs on the same tree got the yellows. Here was an instructive lesson. Who will doubt that if the early warm weather would have continued the result would have been quite different. We might cite other facts of the same nature tending to support our views but the limits of this article will not admit of it.

Supposing our hypothesis to be correct, it becomes us to inquire what means are proper to be used to meet the case, and give us a better supply of this superior fruit. The few words we have to say will be principally suggestive, and are more particularly intended for such as plant only a few trees.

The main object to be kept in view in all our efforts, is to give the tree shelter—shelter from a variable spring.

This can be done to perfection, and a crop made *certain* by building cheap glass houses. Another way in which health is preserved and a crop made much more certain, is to train the trees against the walls of houses, or walls built for that purpose, as the English are forced to do in their rainy climate, if they want to raise peaches at all. If then, unfavorable weather occurs in the spring, boards can be set up against the wall and the foliage will thus be protected from the rain. Of course, when the weather becomes fine again, the boards must be removed. This, perhaps, is the cheapest and most available method for the large majority of persons. The attention necessary is not great, and the whole process easily learned.

Those who will not go to the trouble and expense of following the course suggested above, but who will continue to plant as of old, will no doubt find it of decided advantage to proceed as follows: They should aim to keep the trees in as good a condition of hardy vigor as possible and thus increase their *resisting* power. Over luxuriance resulting from stimulating manures does not produce hardiness. The plethoric condition is not the best. In the place of manure the tree should receive each spring a few wheel-barrow loads of new soil dug up from the subsoil. This should be spread as far as the branches extend. In the month of April each year, as soon as the tree is large enough to bear it should be 'short-

ened in'—that is about one-half of the growth made the proceeding year should be cut away. This we consider a very important and very beneficial operation. The object is two-fold—firstly to prevent an overcrop both of bloom and of fruit, for a too abundant bloom taxes the tree as well as does too much fruit; and secondly this "shortening in" not only prevents the tree from being overtaxed, but experience proves that we increase its vigor by depriving it with judgment early in the season, of parts of its smaller branches. Nurserymen know this very well and practice it constantly on their young nursery stock.

Planting trees near the walls, or better still, in the angles, of stone or brick buildings is of benefit, because these walls absorb heat by day and radiate it at night, thus ameliorating the rawness of the night air. How much may be expected from planting evergreens as a shelter, we are unable to say from experience, but believe it would do good. What the trees want in our climate is protection, and to this end all our labors must be devoted. We feel assured if this principle is duly recognized, it will point the way to better success. D.

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## Correspondence.

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### LETTER FROM CALIFORNIA.

OCTOBER, 14th, 1868.

J. B. GARBER, Esq.: *My Dear Sir:*—I was surprised, a day or two ago, on looking over my correspondence to find (as I now believe,) that I had not written to you for some months; I have been very busy all the time until the last six weeks, and during that time I have been away touring through the vineyards, trying to learn something.

I have seen enough to surprise me in the great varieties of grapes, their abundant bearing, and beauty and size. In Green Valley, Solano county, there are over two hundred and fifty thousand (250,000) bearing vines, some over ten years old. They are all of foreign and California varieties, with none of what you call American grapes. In addition to these there are as many more young vines. They plant them from 3x5 to 5x5 feet apart, none over the latter distance. They prune to a low head, leaving three to eight spurs, of good eyes, on each. The vines when pruned are not over 8 to 10 inches high from the ground. They are all through with their vintages now—14th of October. Get 1 gallon wine from 15 lbs. fruit, or one gallon brandy from 85 to 90 lbs. fruit—most in wine. In Pleasant valley, same county, they plant about the same; some, however, 7x7

or 8x8 feet. Their vines grow larger and are more productive, and I think are finer and handsomer than any I saw elsewhere.

One grower, from 2000 vines, 5 years old and the second full crop, shipped 600 boxes, averaging 55 to 60 lbs., being 33,000 lbs., and sent about 2000 or 3000 lbs. of inferior to be made into brandy. They brought about on an average of \$1.35 per box. He also sent largely of many fine varieties, such as Malagas, (white and black,) Muscat of Alexandria, Black Hamburg, &c., which brought only 7 to 15 cents per lb., although some of the earliest go from 15 cents to \$1.50 per lb. One gentleman weighed the whole produce of one vine of Barbaroux, 5 years old,—47 lbs., and all merchantable, not a bunch unfit for market. Another grower showed me 700 vines—200 of them 5 year old and 500 four years old; he got from the 700 vines, 3 tons of fruit, shipped, made also 800 gallons of wine, and 85 gallons of brandy. It was the Black St. Peter's variety. There are many other vineyards in Pleasant Valley shipping largely of many of the European kinds—mostly of Sweet Water, Black Hamburg, and Muscats. They are very early, and I think excel in their fruit, and so do not make much wine.

Mr. ———'s place is on the mountain side, 300 to 400 feet above the valley proper, on a bench; and he beats them all in earliness and quality of fruit. It was a perfect sight to see some of his kinds. Bunches of Blue Portugal, Barbaroux, Black Hamburg, Muscats of Alexandria and others, as large and perfect as could be made, weighing 5 to 8½ lbs. the bunch. I went to the fair at Sacramento, and went to see some vineyards in Sacramento county, and although the bunches were large, the berries were not so clear and perfect.

Pleasant Valley heads up about three miles south of where I live, and extends south towards Suisun. It is, next to my locality, the earliest so far known. I am much pleased with this section; it is the earliest, and I am next year on the very earliest spot, which has, for three years, sent in the first beans, corn, &c., in advance of all others, to the San Francisco market.

The thermometer went up to 112 degrees last summer, and was over 100 degrees at 2 o'clock, P. M., for nearly or quite a month. Yet, what was singular, I did not suffer from heat as I did at Oakland (just across the bay from San Francisco,) at 75 or 80 degrees! The air seems to be drier, for I was mostly at work all that time. The nights and evenings are so cool, we have to sleep under blankets. We have had no rain since April 11th; 2.55 inches fell. Our total rain-fall last season, from October to April, was 45.3 inches. Average

temperature for November, 57 degrees; December, 51; January, 43; February, 49; March, 54; April, 58. We began marketing tomatoes, June 11th; beans, May 16th; cucumbers, May 31st; apricots, June 2nd; corn, June 2nd; Hale's early peach, June 16th; grapes, July 7th. We go in here all for the earliest varieties.

It is now clouding up, and threatening some rain; we had a sprinkle on Sept. 3d, also on Oct. 1st; wind, south; thermometer, 64 degrees. Last year it rained enough to plow by Dec. 1st; but then on the 15th, it began to rain in such a style, that I could do but very little until April.

Yours, Respectfully,

## Entomological.

### TIGER BEETLES.

Noxious insects constitute, no doubt, the "dark side of nature" to the Agriculturist and Horticulturist; but dark as this side of nature is, it has also a "bright side". As I may have occasion to say a great deal about noxious insects through these columns, and elsewhere, before the close of the present year, I shall devote a few pages of the mid-winter number to the discussion of some of the innoxious kinds—innoxious at least as far as man and the products of human industry are concerned. We have a family of predaceous insects called in common language "Tiger Beetles," but scientifically CICINDELIDÆ. They are called *predaceous* insects, I presume, because they make predatory incursions for the capture of other unwary insects, upon which they prey. They are also called *Tiger Beetles* because they lie in wait for their victims and pounce upon them like lightning, with the ferocity of a tiger. They not only prey upon other insects in their mature or beetle state, but also during their whole larval period. But as the larva is a slow and indifferent traveler, compared with the mature insect, it therefore resorts to stratagem. It excavates a perpendicular gallery in the earth, in which it remains concealed with its head and powerful jaws just even with the surface, and wo betide any luckless insect that comes within reach of those jaws, for they close upon it with the quickness and relative power of a steel trap, and once within their embraces there is no escape therefrom. But should the trap fail, out comes the larva in pursuit, and when he has secured his victim it is ruthlessly dragged down to the bottom of its cell, where it is most ferociously dismembered and devoured. But the habits of the perfect insect are quite different, for it is lithely built, is a swift runner and a quick and perfect flyer; therefore it has the ability to capture its

prey on foot, or to overtake and seize it in flight. The Family CICINDELIDÆ, in the United States, is composed of the genera *Tetracha*, *Omus*, *Amblycheila*, *Cicindela* and *Dromochorus*, but none but the genus *Cicindela* is known to inhabit the county of Lancaster, but of this one we have ten or twelve species. Usually they are found along the dry, sandy banks or beaches of streams, from a rivulet to a river in size. A few of them, however, may be found in forests or woods, and one species at least, I have often found in gardens within the city of Lancaster, namely the *Cicindela punctulata*. Some of these insects are of a bright green, in color, some almost an ultra-marine blue, whilst others are a purple, a brown, or modifications of these colors; but all are of a bronzed or bright metallic lustre beneath. They vary in size, from three to five-eighths of an inch in length, according to species; the thorax is narrowed, and the head, eyes and jaws, are tolerably prominent. The legs and the *antennæ* are comparatively long and slender. Nearly all the species have *elytra*, or wing covers, more or less marked, from a minute puncture to a dot, or a sort of hieroglyphic, but occasionally specimens are found that are entirely immaculate. I can recollect these insects from a very early period of my boyhood, along the banks and beaches of the Susquehanna, where they were known to us youngsters as "sand flies"; because they could alight and fly off, quicker than the common house-fly. Indeed a casual observer would suppose that they were a species of common fly, that he was driving before him, in his perambulations through their localities. I would caution a novice in entomology against confining a living Tiger Beetle in his collecting box or bottle, if there was anything else in it which he valued, for the Tiger would make pieces of it, even if it were his own weaker brother or sister, unless he was stupified by the introduction of a little ether or alcohol.

The species known to inhabit Lancaster county are the *vulgaris*, *punctulata*, *hirticollis*, *purpurea*, *duodecemguttata*, *patruela*, *marginata*, *unicolor*, *gravidu*, *decemuotata*, *sexguttata*, and *octoguttata* and *immaculata*, which are varieties of the last named species; but there are seventy-five or eighty species of the family, that have been described, as belonging to the territory of the United States. These species are distributed from the Atlantic to the Pacific coasts, and from Maine to Mexico, so that they are performing their uses everywhere, over our whole territory. These are some of the instrumentalities which have been vouchsafed, through the permissions of a beneficent Providence, for the amelioration of an evil which otherwise might become unen-

urable, and which no mere human ingenuity could possibly prevent. And yet how many people are there, who ridicule the idea of studying the histories and characters of such insignificant things as insects. In these studies it is just as important, however, to become acquainted with those species that are beneficial, as with those that are injurious. To assist the people in these studies is one of the objects of this department of our Journal, but to increase its efficiency in this respect, we need the co-operation of our readers, in the manner suggested in our article on the same subject, published in the *Farmer*, of January last. If this bright side of nature is thoroughly developed, it cannot fail to reflect its light upon the dark side. Before the end of the first volume of our magazine is attained, every reader of its columns ought to be thoroughly acquainted with the Tiger Beetles of our county—with what they are like, when they make their appearance and disappearance, where they may be found, and *what they do for a living*.

S. S. R. •

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## Editorial.

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OUR January number was issued amidst the bustle consequent upon the winding up of the old year and the beginning of a new one, and therefore, its general "make up," and the arrangement of its matter, we discovered when too late to amend it, was not at all in accordance with our design. An unintentional prominence was given to matter which we think should only bear a collateral or secondary relation to the leading objects of our Journal. This we hope we have partially corrected in our present number, and will endeavor to further exemplify as we go forward and gather experience in the future. Still, our little bantling has met with several commendable notices from the Press; and a general recognition of its usefulness, and the worthy objects it has in view, has withheld that rigid criticism which otherwise it might have occasioned. Our subscription list is gradually increasing, but we hope that each of our present patrons will endeavor to add another good paying name to it before the opening of spring. We have a sufficient surplus of copies struck off, to supply subscribers with the work from the beginning. One important item of interest to us, as well as themselves, our subscribers will please bear in generous remembrance, and that is, that our terms are *one dollar a year in advance*. If, therefore, on reading this paragraph, any of our subscribers know that their subscriptions are still unpaid, they will confer a favor by settling them at their earliest opportunity. The

high price of material, and the pressing demands of labor, together with the low price at which our paper is furnished, makes an adherence to this rule an absolute necessity. We also repeat our invitation to our readers to furnish appropriate contributions to our columns. Let them send all the important "facts and fancies" that come under their observation, pertaining to the objects of our Journal—but most especially the *facts*—and, passing the ordeal of our examination, we will print them. Some have already generously responded, but we desire many more, because "in a multitude of counsel there is safety." It is not presumed that our editorial committee should know more than any other equal number of men in the community, upon the subjects embraced in our paper. In many respects it can be but the reflector of the opinions and experiences of others, who may be more competent as writers, experimenters, observers and judges. This assumption ought to be self-evident to all our readers, and freely acknowledged.

#### THE DUTY OF WRITING.

"Brother in the tow frock and ragged unthinkables! have you an idea humming in your brain, that seems to you fitted to cure even the lightest of human maladies? Out with it, I pray you, in mercy to a benighted, heart-sick, and blindly suffering race! Sister in linsey-woolsey, and wearing a red cotton handkerchief by way of a diadem, have you aught to say, that, if uttered, would cheer and bless the weary steps whereby we are all measuring off the little span which divides us from the grave? For sweet charity's sake do not withhold it, but let your light shine, even though the darkness be sure *not* to comprehend it—a by no means novel or uncommon case."

The above, quoted from a popular work by a popular writer, which we have been recently reading, seems to apply with equal force to those engaged in any of the branches of rural economy and industry. It is not always the high-born and the learned—not the wearers of "purple and fine linen," and the daily sumptuous farmers, alone, that possess all the wealth of thought, or develop the most practical and useful things of life. The man that can swim, when his boat founders in the middle of a turbulent stream, is in a better condition to save his own life and help another, than he whose head is filled with astronomy, algebra and geology, and yet lacks that life preserving quality. Not that we would discredit any embellishments or accomplishments of the human mind and character, but that we would also encourage the practical common sense illiterate, to take their candles from under their beds and place them in

a candle-stick, that all in the house may see. We have often been struck with the superior manner in which many of the common people do things, simply because they know exactly how. And if they know how, and can communicate that *how* to others, the information is just as good as if it came from a Davey, a Herschel or a Faraday. Moreover their light will not be any the less by communicating its flame to their neighbor. Flooded as the country seems to be, with domestic literature, there still are many vacuums that need to be filled. Our social temple—our domestic structure, needs a variety of workmen—masters, craftsmen and apprentices—in it there is a function for every faculty. Then let us hie to the vineyard of humanity. R.

#### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Society met at its usual place and hour, January 4th, Levi S. Reist in the Chair, and Alex Harris Secretary.

After the President had called the meeting to order, the minutes of the last meeting were read and approved without dissent. The following gentlemen were elected members of the Society, viz: J. G. Garman of East Cocalico; Hon. John Zimmerman, city; C. L. Hunsecker, Manheim township; Benjamin Ritter, Warwick; Almus Brubaker and J. F. Fry, Sheriff, of Manor.

The Treasurer, Dr. P. W. Hiestand next proceeded to read his report to the Society which was on motion submitted to an auditing committee and declared correct.

S. S. Rathvon submitted a verbal report as to the success of the LANCASTER FARMER, and spoke of its encouraging prospects.

Mr. A. D. Hostetter proceeded to read an extract from the *Bellefonte National* on the subject of wheat culture.

H. M. Engle, with reference to the sentiments of the extract, thought he was inclined to differ as regards leaving manure upon the surface of the ground, and believes that farmers will be required to give more attention to the question of manure, before they can expect to obtain the kind of crops they desire. Western farmers have come to discover that their land which was once supposed to be inexhaustible is becoming worn out in some places like our own eastern soils.

Jacob Stauffer spoke of the great benefit to be derived from sub-soiling.

Jacob M. Frantz thought the article read by Mr. Hostetter contained much practical matter, and he believes the farmers must give more attention to the point of consuming their crops at home, and thereby insure a return of its necessary

pabulum for the sustenance of their farms, as the land, like the animate creation, requires its full share of nutriment. He does not believe the plowing down of manures any better than simply putting it upon the surface.

John Brady thinks the drilling of wheat too thick, is one reason why farmers do not raise better crops, and he is therefore utterly averse to drilling.

In this connection Mr. Hostetter resumed and spoke of having seen a drill that scatters the grains of wheat so that they will not be too thick.

Mr. Frantz acquiesced in this view and expressed himself in favor of thin sowing. He spoke of a new kind of wheat which he had procured of Davis Brown, Esq. He says wheat that stood thin on the ground does not mature as soon as that which stands thick.

H. M. Engle differed with Mr. Frantz on this latter point entirely.

S. S. Rathvon next proceeded to read an article from the *Germantown Telegraph* upon the "inquiry why is the country deserted for the city." He read a few reflections which he had himself written in connection with the above stated article.

Levi S. Reist greatly favored the views contained in the article read by Mr. Rathvon, and added that he would much favor the introduction of the study of botany and such branches into the Common Schools, and he believes the knowledge of botany of more real utility than that of Geography and Astronomy. He does not, however, favor the neglect of these latter branches. He believes the science of agriculture should be introduced into the curriculum of studies in the common schools.

Jacob Stauffer likewise greatly favored the study of botany as an elementary branch of common school education, and referred to Darlington's Botany as a book that should be introduced as a text manual into the common schools. On motion of Jacob M. Frantz, the article read by Mr. Rathvon was ordered to be published in the LANCASTER FARMER.

The Secretary read a letter from J. Lacey Darlington, President of the Chester County Agricultural Society, inviting the Lancaster County Association to send one of its members to represent it in the meeting of the Board of Managers of the "East Pennsylvania Experimental Farm," at West Grove, Chester County, on the 8th of January, 1869.

On motion, Levi S. Reist, President of the Society, was chosen to represent the Association.

The Society next went into an election for officers to serve for the ensuing year. Levi S. Reist

stated that having filled the office of President since the organization of the Society, he desired no longer to be considered a candidate for reelection. The election then resulted in the choice of the following officers:

*President.*—Henry M. Englè, of Marietta.

*Vice Presidents.*—Levi S. Reist, Jacob B. Garber, J. H. Hershey, H. K. Stoner.

*Recording Secretary.*—Alex. Harris.

*Corresponding Secretary.*—A. D. Hostetter, Mt. Joy.

*Treasurer.*—Dr. P. W. Hiestand.

*Entomologist.*—S. S. Rathvon.

*Botanist.*—Jacob Stauffer.

*Chemist.*—Dr. J. H. Musser.

*Librarian.*—John B. Erb.

John B. Erb had on exhibition a very neat box for carrying all kinds of small fruit. The box is square, and is one of the handsomest and most convenient that we have yet seen. A box of similar shape and appearance is designed by Mr. Erb for shipping fruit and not to be returned, and this he terms the "free fruit box" These boxes are the invention of Mr. Erb and manufactured by him, and our fruit growers would do well to examine them before supplying themselves elsewhere.

On motion the Society then adjourned until the first Monday of February.

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## Miscellaneous.

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### DEEP PLOWING SHOULD BE DONE GRADUALLY.

A correspondent of the *American Agriculturist*, who has one of the finest and most productive farms in Western New York, which he keeps in a high state of fertility by thorough cultivation and the growth of red clover, makes the following sensible remarks in regard to deep plowing: "A sudden bringing up to the surface of many inches of heavy clay, that has never been punctured by the roots of plants, and this too in the spring of the year, would probably injure the first crop. Clay sub-soils are best brought to the surface two or three inches at a time, and that in the fall, so that the frosts of winter may mellow them down. The next spring plow, say twice as many inches deep as the clay subsoil is thick. This will mix things up so that even a crop of corn would be much improved by the deep fall plowing. If we had the power and tools necessary to go on with this process of bringing up the subsoil to, and mixing it with, the surface soil, until we had one foot or more of mellow soil that had been enriched by turning under repeated



clover crops, and then under this foot or more of oil, we could run a subsoil plow two feet deep, and so break the clay to a depth of three feet, the clover roots would have a chance to bring to the surface the fertility that now lies dormant under the surface of our lands. This is the theory that I have constructed on the experience of a lifetime as a farmer; and I have no doubt of its applicability on our lands here. I do not think it would do on all lands, but it is practicable here, or at least will be when we get the Steam Plow that can do the subsoiling for us. In the meantime we are doing the best we can in the direction I have indicated."

### PROPERTY IN PLANTS.

A question is now being discussed which is of no little importance to both raisers and growers of plants. In brief, it is this: Should not one who, by years of careful labor and patient experiment, produces a new and valuable fruit, or other plant, derive some pecuniary benefit from it? Books, the result of a few weeks' labor, are copyrighted, and cannot be reproduced without the consent of the author. A particular arrangement of sticks and strings for growing hops, or a combination of the posts and wires for a grape-trellis may be patented, and no one can use them without paying for the privilege of doing so. But if one, after many trials and years of failure, produces a new variety of hop, or a new grape of more value to the country than all the trellises that were ever invented, the moment the first bit of either goes out of his possession he loses all control over it, and whoever possesses the most ample means for propagating realizes the greatest benefit from it. That the originator of a valuable plant should be remunerated no one will deny. How protection can be assured by law is not easy to see. Several earnest horticulturists, who think something should be done, are moving in the matter, and it will, probably before long, be presented to our law-makers.—*American Agriculturist*.

**CARD THE COWS.**—One would think that any kind-hearted man, when he sees how grateful this operation is to a cow, would be willing to spend a few moments daily in carding her. It pays as well to clean a cow as a horse. All who have fairly tried it find great benefit from the operation. And yet not one farmer in a hundred makes it a practice to use the card or curry-comb in the cow-stable. We know stupid men who laugh at the ideas as a mere notion of some fancy farmer. But, in point of fact, no cow can give the best results at the pail unless this matter is attended to, especially in winter.

### OLD MAIDS.

There is a stigma of reproach cast upon the term "old maid"—too often justly so, I admit. But where does the fault lie? I know two women who may be classed in this category—unmarried, forty years old, or thereabouts. Both are of good family, the daughters of wealthy men. The one, some dozen years ago, finding, as no sensible woman can fail to find, that fashionable life had nothing in it to satisfy her, made a stand for herself. She told her family that she must have a life of her own. She had no especial gifts, except a remarkable aptitude for business inherited from her father. In a quiet way she had turned her attention to fruit-growing, a branch of industry offering many attractions to her, and into that business she determined to enter. Fortunately, she had sufficient money, left her by her grandfather, to be able to carry out her plans, despite the sneers of her fashionable acquaintance, and the objections and obstacles raised by the home circle. She established herself on a fruit farm in the western part of this State. Her work prospered. Now she is the owner of several hundred acres, and has constant and remunerative occupation of a kind agreeable to her. After a few years her father died, and, instead of the rich man he was estimated, he was found to be bankrupt. This daughter had a comfortable home and support to offer her mother and invalid sister. She has quite a settlement of work people, men and women, to whom she and her sister minister in various ways. In fact, she lives a life which is useful to others and develops her own powers, and in the consciousness of that she finds happiness and peace.—"NEW WINE IN OLD BOTTLES," in *Feb. No. of Lippincott's Magazine*.

A CORRESPONDENT of the *Western Rural* says: "I wished to raise enough wheat for my own consumption, and wanted it clean from oats or other foul seed. In order to clean it (the seed) I used a strong salt brine, skimming the trash off. The seed was left in the brine over night, and in the morning I dried it with lime and wood ashes, and sowed it by hand, five bushels on  $2\frac{1}{2}$  acres of clay land, on March 31. The result was seventy-seven bushels of splendid wheat. The threshers said it was the best yield and the best wheat they had seen this year. My neighbors' best crops have averaged from fifteen to twenty-two bushels per acre."

**RUST ON DINNER KNIVES.**—Cover the steel with sweet oil, well rubbing it on. Let it remain forty-eight hours, and then, using unslacked lime, finely powdered, rub the knife until all the rust has disappeared.



THE

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE CELL, OR CELLULAR TISSUE.

The simplest form of organic life is the "cell." This minute organism proceeds from the germ of a living parent, and in its first stages of development is but a bubble, as it were, upon the surface of the earth, which might be the result of fermentation, or a combination of the gases of the atmosphere with the moisture of mineral matter and the heat of the sun.

Herein exists the beginning of life,—the first vital principle of vegetation. It may be perceptible to the naked eye, or it may be an atom of microscopical wonder. But, however small, and in whatever circumstances found, it is the remote principle and simplest creation of vital endowment. The precise property of this endowment is one of the mysteries connected with the science which has never yet been revealed. Suffice it to say that it is *life*, and that it is the result of contact between the germ and the conditions of growth. This germ may be a minute molecule of matter, but it must have a living unity with its condition, and be identical with the species of

plant which nature has designed shall be the result of its complete development.

This simple cell structure then is composed of atoms held together, not by outward mechanical or chemical laws, but by that innate and positive principle known as "vital energy." It is, therefore, a membrane of living matter, containing material and power for the formation of other structures of a similar character.

When all the conditions of growth are fully met and as this germ cell increases in size, a distinction becomes perceptible between the walls and the contents of the cavity. The walls are transparent and homogenous in texture, whilst the contents of the cavity vary in color from green to crimson. At first they, too, appear to be homogenous, but a fine granular appearance becomes perceptible, and a change gradually takes place, which seems to consist in the aggregation of minute granules into molecules of a more distinguishable size and form. These molecules, which are the germs of new cells, seem at first to be attached to the walls of the parent cell; afterwards, however, they separate from it, and move about in its cavity, and at a later period the cell bursts and sets them free. This, then, is the end of the life of the parent cell, but the commencement of the life of a new brood; since each of these germs may become developed into another cell after the foregoing manner, and will then in its turn multiply in kind by a similar process.

Even in this remote form of life, therefore, we have the principles of life and death, and of removal and replacement. We have also tissues and organs, which grow and multiply as the process of development is carried forward. As an organ, it possesses the function of secretion and excretion, to be followed with the higher functions of appropriation and assimilation, and also the property and power of formation, through the instrumentality of those functions.

This simple organic structure in the vegetable world, finds its nutriment and proper stimulant, in certain elements which are the results of the combined chemical action of heat, moisture and light. The essential agents of enlargement are

carbonic-acid gas, water and ammonia. Where these are present, the cell will grow and multiply by the appropriation of new and other compounds, whose properties adapt them to become part of the organized fabric.

As these structures increase, and are built one upon the other, they form a net-work of living matter, which, when interwoven with matter of a more complex character, is termed "*cellular tissue*." This is the lowest and simplest fabric known to vegetable life. All plants are composed of it, irrespective of the manifold forms they ultimately assume. But as the process of development has only begun, new tissues are formed, consisting of "*Woody Tissue*," or "*Woody Fibre*," and "*Vascular Tissue*," and *vessels* of various forms.

The cells in the tissues just enumerated, assume different forms, according to the character of the plant or the nature of the tissue they are designed to build up, when the plant is in a higher and more complex stage of development. They are in the embryotic stage, however, exceedingly variable, but always adapt themselves, in form at least, to the conditions of growth by which they are surrounded. Some plants require a circulation of air through their entire fabric, as much as they do sap. In such structures the cells are usually round, or nearly so, with inter-cellular spaces adapted to such circulation. Others, again, of a denser texture, have the cells pressed together into square blocks, as it were, like a brick wall.

The tissue thus begun, is carried forward by the same process of removal and replacement, and assimilation and appropriation. Drawing the conditions of life and growth from the inorganic world, the plant assumes a shape peculiar to its kind, and its tissues are condensed into the solid unyielding bark or wood of the tree, or the softer substances of fruit and vegetable fabric.

There are peculiar isomeric compounds brought into requisition, in this phenomena of growth, by which a mutual convertibility of the different substances is effected. *Cellulose*, which is the same as starch, and which enters largely into the substance of vegetation, is in the germinating seed converted into sugar, in which condition it seems better suited by virtue of its solubility to nourish the embryo plant.

This is analogous to the phenomena of growth and nourishment in the animal. Both plants and animals, therefore, it becomes apparent, in their properties and structure, may take their origin from the same organic material. *Cellular tissue*, *vascular tissue*, *cellulose* and *lignin*, in regular continuity, are furnished by the same glutinous sap,

elaborated by the same powers of nature, started by the germ of sugar, from the particle of *cellulose* placed in condition of vital force and activity.

The process of nature in the mineral is far different. There the law of attraction and cohesion being the principle of enlargement, the crystal grows by attracting particles of a similar substance to it in solution. It enlarges by the deposit of particles upon its *exterior*; whilst there is no such change or power in the interior.

The cell, on the other hand, grows by an interstitial deposit. New matter mingles with the old, from an inward force, and its growth is characteristic of the species of plant to which it belongs.

The laws, however, which govern formation and growth by the process of appropriation and assimilation, must have their counterpart in principles of waste and displacement. There must be a circulation by which effete matter is thrown off, whilst healthy tissue is being formed; in the vegetable as well as in the animal. If this provision did not exist, the equilibrium of the conditions of vital force would be materially disturbed, and the organic mass, or object, would be subject to the most terrible and monstrous malformations. There would also be chemical convolutions by which volatile gases would roll together with no fixed laws, and be subject to violent combustion. Or be consumed by the oxygen gas, set free by the loss or absorption of the forces which hold it in chemical union and combination, in the formation of cellular tissue, in the simplest vegetable organism, as well as in the elements which surround the globe upon which we live.

S. W.

(TO BE CONTINUED.)

## THE CULTURE OF WHEAT, AND ITS SOIL.

BY P. S. REIST.

Among the various cereals there is none so profitable, and none so palatable, to civilized man, as that of wheat. It is the most prominent and staple product of the earth, and may be classed as one of the principal supports of human life. Cultivated in all civilized countries, and in all ages, it constitutes a great part of the world's commerce. It has increased in quantity in the United States from time to time, varied only in unfavorable seasons, the average bulk increasing steadily, the quality holding about its own. But the quantity is evidently decreasing to the acre, as gradually as our lands are wearing down, especially in those parts of the Union, where good farming is neglected; hence the product is reduced from forty down to fifteen, and in some cases even to

ten bushels to the acre, according to the fertility of the soil, favorable seasons or management.—That this result is not merely local, but that it is pretty widely extended, whatever the cause may be, is evident from the following extract culled from the columns of a cotemporary journal, and to say the least, is suggestive of a very unfavorable state of affairs :

“The San Francisco papers complain that the yield of wheat in California has fallen from forty bushels an acre down to twenty bushels ; and that if the present improvident style of farming continues, the crops will not average over twelve bushels an acre. The old custom of burning the stubble and straw, instead of turning it into compost, has been revived. If the practice is not abandoned, the worn-out fields of California, it is asserted, cannot be restored without great expense and the application of the best agricultural skill.”

In speaking of the soil it may be said, that primarily, there are two kinds, called natural and artificial : the *natural* constituting the original, where timbers and forests have been cleared away, and prairie lands composed of deposits of perishable vegetable matter, that has been accumulating for thousands of years, filling up and creating a rich soil, and without which hardly anything could be raised. The *artificial* soil is made up of lime, manure, and different kinds of fertilizers, spread over and mixed with the ground.

What we call *new lands*, such as is cleared of its timbers and forests, and prairie lands, will, by proper treatment, produce forty bushels of wheat to the acre, as is now naturally the custom. However, crop after crop is taken off, until the ingredients or substances composing wheat, such as hydrogen, oxygen, potash, silica, &c., are entirely exhausted, and nothing is done to replenish the same.

Of the grain cultivated, sold and shipped, much of it is converted into alcoholic liquors, and made into pernicious beverages, the excessive use of which mars the peace and happiness of the human family ; thereby reducing the bulk necessary for man's subsistence. A great deal of straw committed to the flames—not enough manure made to keep up the soil to a grain producing standard, with no facilities to procure lime in many parts of the Union, and most of the patent or improved fertilizers too expensive for general use. Thus a great part of the best sections of our country, the best wheat producing sections, are reduced to a deplorable condition, without any *real* prospect of their recovery.

Our wheat crop had steadily increased in bulk up to the year 1850. We had an annual yield of 100,400,000 bushels, and about seventy per. cent of an increase every two years, which raised the

amount up to 170,180,000 in 1860, which ought to show the gross amount in 1870, of 280,000,000 bushels. It is not my purpose now to speak concerning the different kinds of wheat, nor the best quality, but the best way to raise the largest quantity to the acre.

Land should be plowed early. Land that is plowed early in the spring of the year, even when a crop of tobacco had been previously raised thereon, can be made to produce a good crop of wheat, without plowing in autumn at all. Land ought also to be plowed in June or July ; or at least, as early as practicable ; indeed any kind of land can hardly be plowed too early, in order that the rains may beat it down. My way of raising wheat on stubble land, is to haul manure on it immediately after harvest, and to plow it under as soon as practicable, say before or by the first of September. Land for wheat should be plowed, rolled and harrowed, so that the rains may beat it down solid and compact underneath, but should be cultivated and rolled on top about three inches as loose and mellow as the roller and harrow can make it, and then should be sown from the 15th to the 25th of September, when the ground is in good order, say from one bushel and a half to one bushel and three pecks to the acre. The ground must necessarily be solid and compact though not hard and crusty underneath, but loose and mellow on the top, and should be sown early enough to give grain a chance to cover its roots in the fall before cold weather sets in, in order to protect itself from freezing out, or freezing on top, (when grass seed will also succeed better.) All this is proven on all alluvial soils, and where the tough sod on prairies is reduced to a fine loose state.

No winter wheat can be raised, let the soil be ever so fertile, except the season turns out extraordinarily favorable, unless the wheat fields are covered with snow to protect it ; early in the fall until late in the spring. The roots of wheat exposed to the cold air in the loose ground, will freeze, the same as the roots of apple or pear trees will. My advice to farmers is, in order to raise good crops of wheat and in addition to what I have already said, to feed their corn to cattle, and convert all their straw into manure during winter, but keep less stock during summer, so as not to rob the fields of their verdure.

[As have a bearing upon the subject discussed in Mr. Reist's essay, we commend to our readers the following ; especially as the matter is eliciting the attention of wheat-growers in various sections of our extended country, and not without well grounded anxiety in regard to the future. The time has arrived when it seems something ought to be done, in order to bring up the production of

this staple cereal to the ratio of our rapidly increasing population.—Eds.]

### Wheat--Its Present and Future Production.

From present indications the production of wheat does not keep pace with the increase of population; or, in other words, the demand is rapidly out-growing the supply. Were it not for the adventitious supply from the Pacific slope, we should be importing wheat or live upon rye and Indian bread—no bad substitute for the wheaten loaf, and much cheaper, and our bran-bread philosophers would say, much more healthful. There is no fear of a scarcity of bread food.

Indian corn is truly the golden gift of a beneficent Creator to man. Its importance is not even yet properly appreciated. Upon it more than any other cereal depends the prosperity of the Continent. The wheat crop has no real significance beside it. A failure in the corn crop over the whole country would be far more disastrous than of the wheat crop.

Upon an abundant crop of corn depends cheaper pork, beef, mutton, poultry and eggs—of butter and cheese, and, what some may consider the greatest benefit of any, whisky. The wide range given to its successful cultivation, from Labrador to Florida, and the ease and certainty wherewith it is cultivated, make it, especially among cereals what gold is among metals—the most precious.

But by adopting proper modes of cultivation, may not the production of wheat be increased to an unlimited extent? In other words, has population so far trenced upon land as to materially lessen the area which can yet be devoted to its production, even in the older sections of the Union? While the soil is in its virgin state, filled with vegetable matter, and the accumulated mineral plant food, wheat can be grown. But in most soils, except of a calcareous base, the usual modes of cultivation soon exhaust its power of producing wheat in any remunerative quantities. The area of lands which are natural to the plant, or to its successful cultivation, is smaller, perhaps, than is generally supposed. New England has not over two per cent.; New York only twenty; Pennsylvania, eighteen; while all that part of the West which lies upon the New York system of rocks has about sixty per cent. of natural wheat soils, and the Southern or Cotton States have a still larger proportion of their area where wheat may be grown as an indigenous plant. The area hereafter brought under cultivation will be equal at least to that which may be taken up for the exigencies of an increased population.

The area of land now in cultivation in the United States and its Territories is not far from one hundred and sixty-five millions of acres—say one hundred in the Northern and Western States and sixty-five in the Southern. For seed and bread our population requires an annual product of two hundred millions of bushels of wheat. This quantity is about our annual product. The average yield is about five to one sown. In California and in some of the most productive wheat-growing States, it is much higher, but in the South, owing to their present defective mode of cultivation, it is much lower—probably not reaching over two and a half, or possibly three.

By the "South," now and hereafter, I wish to be understood as referring to the Cotton Zone, which lies beyond and south of the thirty-seventh parallel of north latitude, or the north lines of North Carolina, Tennessee and Arkansas, to the Mexican boundary.

It is safe to assume the annual average acreable product of all the acres sown to wheat in the Union do not exceed eight bushels of sixty pounds to the bushel, or not enough is harvested from the acre to support two persons and furnish seed for the next crop. The acreable product is undoubtedly estimated at too high a figure. Of the enclosed land in farms, at least one-half, or fifty per cent., is in meadow or pasture. Of the other, or arable or plow land, it will be found that not over one-sixth will be in wheat, even in wheat farms. The balance will be in corn, rye, barley, oats, buckwheat, beans and roots of different kinds. It follows, then, that of the land enclosed and in farms, only about one-half, or eighty-two and a half-million of acres, are in grass as pasture or meadow, and the other half covered with tillage crops. Of tillage crops, wheat does not average more than twenty-five per cent. of the breadth plowed.

The number of farmers occupying farms above three acres each amount to three millions and the average size of the area of enclosed land in farms is not far from fifty-five acres, of which not over twenty-seven acres are annually under the plow or in cultivated crops. If my premises be true, not over seven acres of each farm can be in wheat.—*T. C. Peters, in Moore's Rural New Yorker.*

### BOTANY.

*Mr. President and Gentlemen:* The word Botany, from the Greek, signifies herb or grass. Indeed, the study of the vegetable kingdom is included in the word Botany, and embraces, 1st, A knowledge of the various parts comprising plants, and of their uses, their mode of culture, and their diffusion over the earth. 2d. An arrangement of plants into classes and families, according to certain prevailing resemblances, by which they are named and described, so that they may readily be known. 3d. The various uses of plants, as for food, medicine, art and manufactures.

Considering the profusion and variety of vegetable forms with which God has clothed the earth, it is no wonder that the attention of the earliest races of mankind were, as they must have been, directed to the vegetable kingdom. Hence we find Noah represented as a husbandman, planting the vine. The Ishmaelites carried spices, balm and myrrh from Gilead to Egypt, in the days of Joseph. Solomon was, no doubt, a Botanist. For in the Book of Kings it is said: "He spake of trees from the Cedar tree that is in Lebanon, even unto the Hyssop that springeth out of the wall." Suffice it to say that the science is as old as it is honorable and worthy the attention of all

classes, and especially adapted to the aspiring Agriculturalists of our growing country, who seek to elevate their noble profession to its just rank among human pursuits—knowing, as they do, that *intellect* will aid muscle in accomplishing useful purposes. That there are some plodding disciples of the old school of Agriculture, who despise every form of knowledge derived from books, may be true, and that they have serious objections to many of the terms adopted in the machinery of science, is not surprising. Yet, new as the terms may be, and hard to understand at first, an active intellect will speedily acquire the meaning of words, which are definite in their signification, and, when once understood, will give a clear idea of what particular plant or feature is described.

In these, my introductory remarks, I have briefly hinted to the general question. The subject is so extensive, and the field so large, that I shall not attempt to dwell upon the structure of plants, their organs and functions, of the nutrition, reproduction, fructification, germination, &c., as these matters are fully set forth in works published on these subjects, to the study of which, I would simply direct your attention.

Nevertheless, I may say that Agricultural operations, with the vegetable kingdom, rank higher than those with the soil or machines, as requiring not only knowledge, but a considerable degree of skill.

Weeding, however simple an operation, requires a certain degree of Botanical skill to know what to weed or extract. There are such plants as it is not desired to cultivate; the weeder should know at sight the plants to be left from such as are to be removed, which is generally a matter of no difficulty, since the cultivated plants are few and well known, whereas the weeds are numerous. It is yet desirable to know the character of the weeds, however common. Some have valuable medicinal properties, or are useful for other domestic purposes. You may have read of them in your papers, but being unacquainted with them, do not know that among the weeds plucked up and thrown on the muck heap, some bear seeds that will multiply the crop in your fields spread over with manure, which, had they been laid aside, their use might have saved you the expense of an inferior article bought in the drug shop.

Many of our weeds have been introduced from Europe, like the *Camelina Sativa*, known as wild flax in German, *Der Leindotter*, and sold in the seed shops as "Gold of Pleasure." Dr. S. Keller, of Elizabethtown, sowed a large patch of this pernicious weed, bought under the glowing title of "Gold of Pleasure." I then informed him that it was a regular pest in many of the grain fields

about Mount Joy, and being an annual, it is, however, not easy to prevent it from maturing its seeds, and that farmers had better watch the progress of this plant and arrest its appearance. This foreigner was formerly frequent among flax—and some ignorantly supposed it degenerated flax. I mention this plant because our worthy President called my attention to it under the German name of *Dodd*.

The flax vine *Dodder* is a *cuscuta*, belonging to the natural order of the *Convolvaceæ*, while the *camelina* belongs to the *cruciferae*, two very distinct orders of plants. The cabbage tribe and mustard tribe, and the morning glory tribe, having no affinity with each other. Such is the difficulty arising from common names indiscriminately applied, which the true scientific name at once separates as not only distinct genera, but actually in widely separated classes—plants having the one polypetalous, and the other monopetalous corolla. The *cuscuta* is a parasitic herb, with slender, twining, leafless orange colored stems; germinating in the earth, but speedily attaching themselves to other plants by a radicating process, through which they derive nourishment and, dying at the root, soon lose all direct connection with the soil. The flowers are in clusters, and form, frequently, tangled masses along the margins of our streams, entwining the lizard's tail and other plants growing along the banks, as well as among cultivated plants, which they sap of their juices. I should, perhaps, not have made personal remarks, but I was referring to facts to illustrate a point, and might adduce numerous instances of the kind, but my object is attained, if it will call your serious attention to the subject of Botany. Having done me the honor to elect me Botanist of your society, I shall cheerfully give at all times such information as thirty years study of the subject may enable me to give. Any weeds, culled by the members at any time, and submitted to my inspection, shall be described, as I doubt not, with satisfaction to those who may desire such description and name of the plant. Very respectfully submitted by

JACOB STAUFFER.

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## Agricultural.

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### WHEAT VERSUS CHEAT.

After the many discussions and refutations of wheat turning into cheat, and the standing offer of \$100 by the Farmers' Club of New York to any person who will show to said club a stalk of cheat grown from a grain of wheat; there are still many otherwise honest, good, practical farm-

ers, who believe in the transmutation theory as firmly as in anything else. Such a belief seems in itself harmless, but its tendencies and results are by no means harmless. It follows, as a matter of course, that those who believe that wheat will turn to cheat, will grow a larger proportion of the latter, than those who disbelieve; consequently thousands of bushels of it grow annually where wheat might grow as well. And this is not the only evil result, but also the reduction of the value of the wheat with which it is mixed, as millers are often unable, and frequently indifferent, to clean it. The consequence is, blue flour and blue bread. Our candid belief is that if every farmer in the country would, for a series of years, allow not a single grain of cheat to mature on his farm, he would have no longer any cheat about which to believe or doubt. As a general thing, the farmer who does not believe in the changing theory, is very little troubled with cheat, unless unfortunately he gets seed wheat from his believing neighbor, or, from some believer. Admitting the theory of Botanists and Naturalists, that all the grains have been developed from the grasses, and consequently may return again to their original condition.

It does not, however, seem reasonable that a grass which had been thousands of years in developing to a grain, should in one year return to a grass. That nature has frequently, and may again, produce remarkable freaks will not be denied, but the returning of wheat to cheat with so much certainty as many would have us believe, can scarcely be considered a freak. We, therefore, admit our skepticism in the case, and enter our protest against the disseminating of such a theory as derogatory to good husbandry. And, further, why should not the rule work both ways, so that if wheat will turn to cheat and this be sown, may it not return to wheat again. Such results, however, our opponents do not claim, nor yet even admit. It is, therefore, high time that this fossil idea be eradicated, and instead thereof, that sounder principles be inculcated, when, no doubt, better practical results will follow.

H. M. E.

#### HOW TO RAISE CHESTER COUNTY HOGS.

The "Chester county hogs" are extensively known throughout the state of Pennsylvania, at least Eastern Pennsylvania. In some places, and by some people they are called "Chester Whites," and are considered superior to anything else of the hog kind; while at the same time, adjoining counties may have breeds of their own, that are not inferior to these—or indeed a *better* breed. There seems however to be "everything in a

name." At an agricultural exhibition in 1860, a neighbor of mine purchased and brought home some Chester county pigs, obtaining them from a noted breeder of that county. As the holders of these animals claimed to be of the progressive type, I was also induced to procure some of them, turning my former stock out to run at large. I felt exceedingly proud in being the possessor of this "Chester county stock," but I soon "come to grief." They had an ungovernable penchant for crawling out of the pen and scaling fences, something I had never seen before, to the same extent, in any breed of swine. I could only make them weigh from two to three hundred pounds, and felt that I had better let the man keep his pigs, and been content with the breed I had before; and which, without having the crawling and scaling propensities of the Chesters, I could easily make to weigh from three to five hundred pounds.—These latter were the pure Lancaster county breed. I started afresh with the ordinary Lancaster county stock, and all other things being equal, they will compare with the best Chester county stock. Under favorable circumstances I can make them weigh from three hundred and fifty, to six hundred pounds.

I sold one of them to Mr. Abraham Shenk of Oregon, in this county, which, at this writing, will weigh from six to seven hundred pounds, and bids fair to become much heavier. That there is a difference in the *breed* of hogs I admit. A person who is a good judge of stock, is able at once to select a good breed, from the general appearance. Such judges are to be found in any of our eastern counties, and perhaps also elsewhere. Two years ago, I bred three litters—twenty-three in number, all about the same age, and all of the same breed. I sold them all, twelve of them to three parties, who made a first, second, and third choice. The remaining eleven were sold to two parties, six months afterwards. I afterwards took occasion to see the hogs I had sold, and found that the three parties who had made the *three* first choices, had only ordinary hogs—they had the appearances of western breeds; whilst the eleven, sold to the *two* parties, had the appearance of Chester whites, and could have been sold as such. To succeed with these hogs, they should be kept in a dry and warm pen or stable, with two apartments if possible. They should be furnished daily with dry straw, and fed regular. This is the way I "raise Chester county hogs," namely, by selecting good *Lancaster county stock*, and then giving them good Lancaster county treatment. By this rule you can increase the quantity one hundred per cent. over the Chesters, and lose nothing in quality—at least this has been *my* experience in raising hogs.

L. S. R.



## SORGHUM.

We hear less and less of the culture of the Chinese sugar-cane. In the eastern and middle States it has evidently declined; but in the western States the reverse is the case. The *Sorgho Journal* is still published at Cincinnati, but it is not devoted exclusively to this subject; yet the manufacturing of molasses from sorghum is clearly on the increase farther west, where the cost of the imported article is much dearer than with us. Sugar, of excellent quality, has in some instances been made from this cane, and from the fact that the business appears to be extending, it must be profitable.

## Horticultural.

## PLUMS FOR THE MILLION.

We quote from the columns of that excellent journal the *American Entomologist*, the following article on the cultivation of certain kinds of plums, which seem to be curculio-proof, believing that the subject is of sufficient importance to interest cultivators of that fruit in this locality.

"We have shown, in preceding articles, how professional fruit-growers may raise good crops of plums, of any desirable variety suited to their locality: first by frequent jarring their trees and destroying the curculios that fall therefrom; and, secondly, by allowing hogs the range of their orchards, so as to get rid of all wormy fruit as it falls, and thus nip the evil in the bud.

But for the unprofessional cultivator, who has only a few trees growing in his garden, both the above methods are, as a general rule, impracticable. It is as much trouble to prepare for jarring a single tree, as for jarring a hundred, and as to allowing hogs the run of a garden, that of course is out of the question.

Luckily, however, for those who wish to cultivate plums on a small scale, though not of the finest quality, there are two varieties, which may yet be grown successfully, without any special attention to fighting the curculio. The first of these is the Columbia plum, a variety of the European species—*Prunus domestica*. The second is the Minor plum, otherwise known as the Hinckley plum, Isabella plum, Gillett plum, Townsend plum, Robinson plum, &c., which is a cultivated variety of one of our American wild plums, distinguished by botanists as the Chickasaw or Wildgoose plum—*Prunus Chickasaw*. The native home of this wild species seems to be the South-Western states; but Dr. Latham quotes it as occasionally found in Illinois. It is altogether different from the common wild plum of the West—*Prunus Americana*, which has a smooth, less elongate leaf, and differs in various other respects."

The article then goes on to state that the *Columbian plum*, is extensively raised near Albany, N. Y., is round, and fully two inches in diameter, ripens in August, and brings from \$10 to \$12 a

bushel in market. Although this plum is as freely stung by the curculio as any other variety, yet such is the exuberent flow of its juice, that the larva which hatches out from the egg, is almost invariably drowned out and comes to naught. The *Minor* or *Hinckly Plum*, has been extensively grown near Galena, Illinois, for the last thirty-four years, has a thick skin, is one and a-half inches in diameter, is round, red, and fine in its texture. It ripens from the last of September to the beginning of October, and by scalding is said to keep well through the winter, by simply placing it in any open vessel, and covering it with the liquor with which it has been scalded. This plum brings from \$4 to \$6 in the Louisville market. Its firmness of flesh allows it a long transportation without injury. But the most important quality, in these precarious times of the plum crop, is its almost complete exemption from injury by the curculio. It has always been said, that our common wild plum, in this state—which by the by is becoming very rare, through the wholesale slaughter of our forest trees—is exempt from the attacks of the curculio, and hence, the editors' remarks on the plum question, although discussing the subject rather entomologically than pomologically, are entitled to the respectful consideration of fruit growers in this region, even if they had not been supported by some of the most indubitable authorities in the western states. The editor concludes as follows:

"We repeat, therefore, that the Columbian plum is probably, and the Minor or Hinckly plum is certainly, the plum for the million, on account of its hardness, productiveness, and almost complete exemption from the attacks of the curculio. Whether in case of the latter, this exemption is due to the drowning out of the larva, as with the Columbian plum, or to the late period at which the fruit matures, rendering it unsuitable food for the "Little Turk," or finally to the fact of its belonging to a distinct botanical species from all other cultivated plums, is a question of no practical moment, though theoretically of the highest interest."

We commend the whole article, as well as the journal itself, to the favorable attention of our readers, and in the mean time would suggest that its facts, and the experiences therein recorded, seem to breathe more "hope" to the plum-growers, than anything we have seen, upon that delicate subject, for many years. Are our nursery men cultivating these species of the genus *prunus*? If not, had they not better do so without delay?

Since writing the above, we have been informed by Mr. Peter Reiley, a practical fruit grower of this City, that he has the Columbian Plum under cultivation, and finds it as liable to injury from the curculio as any other variety. Still under a change of circumstances this may not be the case.

S. S. R.



### CULTURE OF BLACKBERRIES.

The following article was read by William Parry of Cinnaminson, N. J., before the Fruit Grower's Club, of New York City, July 30th, 1868.

"The cultivation of this fruit for market was greatly stimulated by the introduction of the New Rochelle berry, about a third of a century since, and perhaps no person has contributed more than William Lawton, whose name it mostly bears, toward calling public attention to the importance of the extensive culture of this fruit. Its large size, great productiveness, and other good qualities, surpassing any other variety then known, made it very popular among fruit growers, and its culture extended widely, so that farmers raised more bushels of blackberries than of corn or wheat. The blackberry occupies an important position in the list of small fruits, commencing to ripen close upon the season of the raspberry, and before peaches and grapes. Its easy culture, hardiness, and the high price at which the fruit sells, make it one of the most profitable fruits to grow. It is not particular as to the soil and location, but yields well where other crops will grow. There is no advantage in selecting the best land for a plantation, as the canes would there grow so large and tall as to require much time and expense to prune, trim and keep within bounds. They need but once planting, as the bushes renew themselves annually thereafter by sending up a spontaneous growth of young suckers to bear fruit the following year; and with an occasional dressing of manure, they will continue to give large returns for many years. I have ten acres of them, on thin sandy land, that have been planted about thirteen years, and still produce fine crops, yielding several times 650, 700, and once 800 bushels of fruit, while land adjoining, equally good, planted with corn, did not produce more than half the number of bushels per acre. When the corn was removed, all was gone. To get another crop, we had to manure and plant again. But not so with the blackberries, for we only pick the ripe fruit, and leave the foliage to fall on the ground and add to its fertility. The plants being permanently established, the annual crop of fruit taken off may be compared to the coupons taken from Government bonds, the principle remaining to produce more.

#### YIELD OF BERRIES PER ACRE.

At the average price at which blackberries have sold in market for ten years past, a field with ordinary treatment will yield from \$300 to \$400 per acre, and in some cases \$600 per acre have been realized, and as it is from the net annual dividend received the real worth of any investment is to be ascertained, we can readily arrive at the true value of a plantation of the best selected blackberries. Having experimented on several kinds of land, from a firm clay to a light blowing sand, I prefer as the most favorable location for blackberries, a light, moist, sandy loam, well underdrained, if water would other wise stand near the surface. Formerly we thought that low, rich land would be best, judging from the large growth of briars along the ditches and swampy places. Accordingly one of my neighbors planted ten acres of low, dark, rich land that had produced heavy crops of corn and timothy, expecting to get a cor-

responding one of blackberry; but in this he was disappointed, except in the growth of canes, which were very large and strong, but not well ripened before winter set in, and consequently were greatly injured, and sometimes entirely killed before spring, yielding but little or no fruit; while blackberries planted on thin higher land, not worth near so much for agricultural purposes producing small canes with buds well developed and the wood matured before the approach of winter, would yield heavy crops of fine fruit. In walking through my patch when loaded with berries, he remarked that he could not understand why those small bushes had so much more fruit on them than his large ones. I attributed it to the fact that the canes and fruit buds were better ripened the fall previous, and had stood the cold of winter with less injury.

#### MODEL BLACKBERRY BUSHES.

Another farmer near by having forty acres devoted to the culture of blackberries, purchased a tract of light sandy land, at \$13 per acre, and planted it with them. But desiring to have a model patch, he purchased a few acres of the richest and best land for ordinary agricultural purposes in the vicinity at \$300 per acre, and planted it with the same kind of blackberries, giving the best treatment and special attention, which produced an enormous growth of canes; but never yielded as much fruit per acre as the \$13 land. He remarked to me, while looking at them, that—"We have learned something since commencing this business; to begin now, with the knowledge we have, the error of planting our best land with blackberries might be avoided,

#### PREPARATION OF THE GROUND.

The land should be ploughed and harrowed smooth; then open furrows in the fall at a distance of eight feet apart; and if muck can be had conveniently, it is valuable to spread along them during winter, leaving it exposed to the action of the frost. Early in spring set the plants about four feet apart on the muck, which require 1,360 plants to an acre. The intervening space, while the plants are small, need not be lost, but corn, potatoes or other vegetables may be grown midway between the rows for the first year or two. The roots will mostly follow along the rows to feed on the muck, and grow more vigorously than lateral or side shoots. Hence the strongest and best plants will come up nearly where they are wanted to produce fruit the following year. But they should not be left to stand along the rows closer together than an average of one plant to a foot in length in the rows. The plantation should be gone over several times during the summer, and the tops of the young canes, as they appear above the bearing bushes; should be shortened in, so as to keep them at a uniform height of about three to five feet according to the strength of the soil. This will induce the side branches to grow vigorously and develop fruit buds near the ground, and, interlocking with each other, the bushes will support themselves, and thus avoid the necessity of stakes and wires to prevent high winds from injuring the tender canes. The side branches should be shortened in the following winter or spring, to a pyramidal form, somewhat resembling a dwarf pear tree when properly trimmed.—

Plants thus properly treated will yield more fruit, and of better quality, than if let to grow tall and slender, as by nature they are inclined to do.

#### PRICE OF BERRIES.

Blackberries have sold readily for several years past at from three and a-half to five dollars a bushel; and this year, owing to the scarcity of fruits, they bring double that price. They will be likely to sell well for many years to come, as they can be used in so many ways, and the demand will be greater than the supply. Some patches will be planted on unsuitable soil, and will not pay costs; others in the most favorable locations will be suffered to grow at random, becoming large and rank, and producing but little fruit.

#### HOW TO RAISE BOUNTIFUL CROPS.

To insure good crops requires close attention; the canes should be kept thin and well headed back; and on poor land an occasional dressing of manure, muck, or fertilizers of some kind, adds to the quantity and quality of the fruit. There is no likelihood of the market being overstocked with the fruit, as it pays well to make it into wine. Three quarts of blackberries and three pounds of sugar, with the addition of a little water will make a gallon of wine, highly recommended for its medicinal properties, worth \$2 per gallon, while new; and its value increases with age. All the poorer berries, those that are too ripe to ship to market, may be properly converted into wine at home; and only the finest and most perfect fruit sent to market, which will always command a fair price.

#### LIST OF VARIETIES.

Being extensively engaged in the cultivation of blackberries myself, having grown thousands of bushels of them within the last few years, and tested many varieties, such as the New Rochelle, Dorchester, Cutleaf, Newman's Thornless, Cape May, Cumberland, Sinclair, Mason's Mountain, Missouri Mammoth, Idaho Climbing, Crystal White, Parker's Early, Felten, Brandenburg, Holcomb, Needham's White, Col. Wilder, and Dr. Warder, also the dewberries sent out by Dr. Minor, of Honeyoe Falls, N. Y., and having now growing ten acres of the Kittatinny and thirty of the Wilson Early blackberries, I consider the latter the most profitable for market, and therefore have planted more largely of it than any other variety. The fruit is large, luscious, and sweet as soon as black, holds its bright color and bears carriage well. The plants are hardy and productive. The Wilson will become a general favorite when its merits become more widely known. The berries sold readily in New York and Philadelphia markets last year, and this also at \$16 per bushel wholesale, and retailing to-day at \$1 per quart, in Broadway, N. Y., where no other variety that I am aware of brought as much.

#### ORIGIN OF THE MOST VALUABLE VARIETIES.

It is somewhat remarkable that all the valuable varieties in cultivation have been found growing wild, and were selected and saved on account of their supposed merit over others, and from the thousands of seedlings raised, none have yet proved superior to their parents. May it not be attributed to the fact that sufficient care has not

been taken to mix the pollen of different varieties? Having grown seedlings for many years without favorable results. I have now adopted the plan of planting some of the best varieties near each other, so as to ensure the admixture of the pollen of many flowers, thereby combining qualities in their seedlings which could in no other way be found in the same fruit. If as much care and attention were bestowed in selecting and propagating new seedling blackberries as has been with the strawberry and grape, we might yet obtain varieties even superior to those now cultivated."

#### HOW MANY ACRES TO CULTIVATE.

The number of acres that can be profitably devoted to the cultivation of small fruits depends on various circumstances, the climate, soil and convenience for shipping the fruit to market, the cost of labor, manures and fertilizers have a bearing on this matter. It has been proclaimed

#### TEN ACRES ENOUGH.

But Young America wants more and I gradually advanced until we got 130 acres planted, viz: 55 of Blackberries, 55 of Raspberries, and 20 of Strawberries, when I found we had passed the point of greatest profit. That the same amount of capital and labor required to keep 100 acres in condition, will yield more profit employed thereon than if extended and distributed over a larger surface than can be well kept in good order. Grass and weeds will take advantage of neglect, and blast our brightest hopes, so that for me

#### ONE HUNDRED ACRES IS ENOUGH,

In small fruits, leaving some land for Apples, Pears, Cherries and grain, hay, pasture, vegetables and truck of various kinds, very useful on a farm and valuable for sale. By having several resources for a dependence, if one should fail the others may carry you through.

#### PLANTING GRAPE EYES.

Those who have not some knowledge of planting single grape eyes, placing them in boxes of rich soil and the boxes in a green-house, had better stick to the old plan of planting two eyes, allowing the upper eye, which should have about an inch of the wood, to be just under ground. They must be set in a straight trench and have the soil pressed firmly around them with the foot. They grow this way with great certainty and almost always take root at both eyes. When this is the case, the lower wood and roots should be cut off, as it makes a prettier and we think a more vigorous vine. When single eyes are to be planted, cut the wood with a sharp knife, commencing at the side opposite to the bud and about half an inch from the eye. In setting out these eyes in the open ground, they should be put half an inch under the soil perpendicularly, and the ground pressed closely around them. It is well to mulch them when hot weather comes on and keep them pretty moist.

## PLANTING TREES.

Presuming that many of our readers may be young and inexperienced, and have lately started out into the practical field of life as farmers and husbandmen, we should be pleased to see them all incline to the habit of a judicious and tasteful planting of fruit and ornamental trees, as well as other useful trees and shrubbery on their premises. Such a course must eventually enhance the value of their property, and afford themselves and their families a higher degree of comfort than can be obtained through any other similar means. It surely will be a gratification in after years for the venerable father to say to his children and grandchildren, "These trees I planted that you may gather the fruit," and for them in turn to say, "You bearing orchard is of the planting, and the result of the forethought of my father," or, "my grandfather." Or, perchance they may point out and say, "Those black Tartarian cherry trees along the lane, and those persimmons, shellbarks and butternuts in the meadow there, and the paw-paws, locusts and maples on the hill-side, as well as the poplars, walnuts and oaks of yonder timber grove, were all planted by my paternal ancestors." Such reflections as these would do much to foster that local pride and home feeling, that seems to be dying out in our money-grasping and restless America. The local ambition of owning and retaining the old Homestead from generation to generation, cannot be an evil one; and even should it eventually fall into other hands, to leave it a comfort and a beauty to the possessor is surely no ignoble record to make. We remember once having seen a very touching poem, by some author now unknown to us, in which an old man is represented as returning to the scenes of his childhood, and calls the attention of a little girl to some trees of his planting, in the following lines:

Yon two gate-way Sycamores you see  
By me were planted, just so far asunder;  
That long well-pole from the road to free,  
And the wagons to pass safely under;  
Ninety-three,  
Yon two gate-way Sycamores you see."

Yes, friends, plant, sow, lend, and you will be rewarded.

L. S. R.

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**GROWING THE FIG IN A NORTHERN CLIMATE.**

A gentleman near Chillicothe, Ohio, has been very successful in growing and fruiting the Fig for a number of years. For the benefit of any of the readers of the LANCASTER FARMER, who may feel an inclination to try the experiment, we will give his plan as follows. He says: Any good

corn ground, with a gentle slope south, will answer. In the fall of the year he lays off the ground with the plow, in the direction of the slope, in beds eight feet wide and a foot high, with the water furrows between to carry off all surface water. He then digs holes in the centre of the bed, with alternate spaces between, of eight and sixteen feet for the plants—leaves the holes exposed to the frosts of winter. Then in the spring, about corn-planting time, he trims the roots of the young fig trees, *so as to have all the roots on the two opposite sides*, plants the trees with the roots *crosswise* of the bed, so that the *side roots* may remain firmly in the soil when the trees are being laid down in the trenches. About corn-cutting time strips off all the leaves, and digs trenches *lengthwise* of the beds, one spade deep, and large enough to contain the body and top of the trees, when laid down in the trench; pegs the trees down, and then covers with the earth taken out of the trench. In the spring, after all danger of frost is past, uncovers the trees, and turns them again to an upright position. It will be perceived that by this plan of treating the trees—all the main roots are on opposite sides, and easily bent down into the trenches, without injury to the roots, and the fig being so vigorous a grower—as soon as exposed to sun and air, pushes right ahead. The above is his plan in as few words as we can use to make it intelligible. We would, however, add as a precautionary measure, to put on an additional covering of boards, or strong manure, to keep out frost and moisture, on a first trial, as wet and frost are sure death to fig trees.

J. B. G.

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**Correspondence.**


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MESSRS EDITORS:—Your correspondent "D," has given a good article on the culture of the Peach, in the February number of the *Farmer*, though, as I believe he has confounded two separate and distinct diseases, will you allow me to make a few remarks in explanation of my dissent from his theory? He is perfectly correct as "to the worms at the roots," being of small account, "as a few moments attention once or twice a year at the proper time will easily destroy them." And we will add, a few shovels full of soap-boiler's ashes, heaped around the stems, in the shape of a cone, or even common soil, or a bunch of tobacco stems tied around the trees, tarred paper, &c., and the earth brought up so as to leave no ingress for the parent fly, to deposit its eggs in the roots, or stem close to the roots. All such precautionary measures will be a safe guard against the worms.

In his description of the "yellows," I opine he has mistaken the "curl" of the leaves, for the "yellows!" These are two distinct diseases.

So far as soil is concerned, we have not a particle of faith to believe, that it has any effect in causing either of these diseases, nor has neglect or bad culture, or no culture at all! We may instance a case many years ago, where peach trees were standing on an old field or commons, bearing large crops every year, healthy, hardy, perhaps twenty or forty years old.

The seeds of trees having the "yellows," will never produce healthy trees, and buds taken from such infected trees, and placed on healthy stocks, will invariably be diseased. Hereditary transmission of the "yellows," is a well established fact. That unpropitious weather in the spring, when the young and tender leaves first escape from their winter covering, is very probably a cause of disease, and when the tender growth is thus checked, disease and death may follow, not necessarily so from the "yellows" however, but from the "curl." Still, if the trees have flowered and any trees in the vicinity are already affected by the "yellows," the bees and insects will soon carry the pollen from these infected trees, to others in close proximity.

Thus you see, our theory is, and we have closely examined many cases since its first appearance, that the "yellows" can only be transmitted from tree to tree during inflorescence, by raising seedlings from diseased trees, or propagating from such stock. When peach buds are killed in the winter, so that the trees do not flower at all, we have often noticed how healthy the trees become the following summer, and on the contrary, when the trees flower freely, if there is a single tree affected with the disease in the vicinity, may be hundreds of yards distant, the disease will be sure to make its appearance on neighboring trees.

We might bring forth many cases to prove this theory, but the small space of the *Farmer* admonishes us not to go into details.

Our friend "D," comes to the conclusion, "that had the warm weather continued, the result would have been different." That the leaves would not have dropped off, and the trees would have remained healthy; the "yellows" would not have injured his trees. In brief, his trees, like many others, put forth healthy foliage and flowers, a cold wet spell checked their growth, the leaves and fruit dropped off, and the trees got the "yellows." Now this is a very plain case. Whether "the cold and wet spell," caused the "curl" we are not fully prepared to say, but we do say, the "curl" was the sole cause of the leaves dropping, and of course weakened the vitality of the trees.

If, then, the "yellows," also made its appearance on the trees, then *that disease* was brought on by wind or insects transferring the pollen from trees already affected, to those otherwise apparently healthy. Under glass, peach trees might be safe from "curl" or "yellows," yet if trees infected with the "yellows" out of doors *would bloom at the same time*, we doubt very much if bees would not carry the disease even under glass.

I well remember the time, when neither worms, yellows, or curl were known, our peach trees were healthy everywhere, in gardens, orchards, old fields, or fence corners, rarely missed bearing a crop of fruit. Occasionally a cold winter would kill the buds, or a late frost cut off the expanded flowers, yet such occurrences were rare, and the tree lived and bore fruit until they were twenty, in many cases forty years old. The worms made their appearance, if my recollection serves, some forty years ago. Then a few years after the yellows came to bother the fruit grower, and perhaps twelve or fifteen years since, the "curl" first came apparently to finish what the worm and yellows had left undone. The worms may be easily overcome, the yellows may be arrested by laying the axe at the roots of the trees the moment it is discovered, but for this last pest, the curl, we know of no remedy.

Yours, &c.,

J. B. G.

#### WHY WONT THE BUTTER COME?

EDITORS LANCASTER FARMER: Sometimes people complain, "Butter is too high in price." Could they understand the labor and drudging required to furnish this indispensable luxury—could they only for a month or two, during the winter, have the pleasure (?) of milking the cows, tend to the milk and cream, churn butter "when it won't come," and then with a few pounds, trudge the weary, long and lonesome miles to town through all kinds of weather, as our milkmaids are in the habit of doing to dispose of their week's labor. Wouldn't they "change the burden of their song?"

Not to extend our remarks, we will not say anything about the pleasure (?) of milking the cows when the thermometer is below zero, or the rain is pouring down in torrents, or the snow filling up all the approaches to the cow stable. Here let us just give an inkling of the operation of *churning* a few pounds of butter: The girls have been churning from morning till noon—the butter won't come! The "old man" takes a turn, but soon looses patience—the butter won't come! The young man tries his hand on the "double quick"—*nix cum rous!* Then the girls having recovered their breath and equanimity, again take

hold of the handle for another long and strong pull; at last, after the patience of the whole household is almost down to zero—the cheering news—the butter is coming!

Can not some of the readers of the FARMER, or some of those having a knowledge of chemistry, (the hidden mysteries of nature.) give us a clue, a hint, or an advice how to “fix things,” so as to shorten this tedious and almost provoking operation. Tell us, somebody, “how to make the butter come.” That’s what we want to know.

J. B. G.

### CURRANT CULTURE.

One of the easiest and most profitable fruits to grow is the currant. The plants are cheaply bought, or easily propagated. They are entirely hardy. They will flourish in almost any soil, though apparently preferring a strong, rich clay or loam. They yield an abundant crop as regularly as the summer comes round. If a ready market for the fruit is not at hand, it can very easily be made into “currant wine,” for which there is always a remunerative sale.

But to grow them with success and profit, two things are absolutely necessary. In the first place, *plant only the best kinds*. Many persons have no idea what improvements have been made in the size and quality of this fruit. Some of the new varieties are as much superior to those with which we were familiar in our boyhood as a Bartlett pear is superior to a Bell. *Plant only the best*.

In the second place, after you have planted, *take care of them*. I don’t know why the currant should be left to fight the battle of life unaided, with grass and weeds, any more than grape vines or pear trees should. Most plants are very grateful for kindness shown them, far more so than some men; but it is especially so with the currant. Give your bush plenty of *rich food*, of *air* and of *sunshine*, and it will hang out its thanks in juicy clusters from every twig. I say your “*bush*,” for most currants are grown as bushes. But I have in my garden currant *trees*, which are a beautiful sight when laden with their richly-glistening fruit. They have a single stem, and are just as tree-form as an apple tree. The currant can very easily be grown in this way. And I think we get larger and finer fruit. There is less wood for the roots to support, and so more of the vigor of the plant can go to the enlarging and perfecting of the berries, and these are held well up from the dirt, and may easily be grown at such a height as to be beyond the reach of the chickens, or even the hens.

If I am asked what are the best kinds, I answer, the *Versaillaise* and the *White Grape*. The

former is a red variety, as large as the cherry, much less acid and more prolific. The latter is white; a *very* abundant bearer, and the berries large, and of a very mild and pleasant flavor. Either of these will give entire satisfaction.

G. H. W.

Reading, Mass.

### LOOK OUT FOR HUMBUGS.

Have any readers of the *Lancaster Farmer* any money to fool away? If they have, then let them buy a right to use that (so called) “most useful discovery” ever known to man—“Improved fruit tree and vine insect destroyer and invigorator.” Wonderful, “the Gods have come down in the likeness of men.” If there are any fools about, let them send at once for the “greatest discovery of the age;” only five dollars for the right to use the stuff after paying for it; what a clever chap he must be; the fools are not all dead yet; just think of it; we can’t have any fruit, nor any other good crops unless each one of us pays five dollars for the privilege to use his recipe, (as if it is the only remedy to insure a crop!)

Now if you will save your money and try some of the remedies recommended in the agricultural and horticultural journals, free for all to apply, and using the same care and treatment, we think the result will be fully as satisfactory, and less expensive. At any rate, when they blow so hard, and want to extract five dollars from every person that has any trees, vines, or other products, they do not deserve the credit nor approbation of this Society, but should be looked upon with scorn as impostors, for they are nothing else. To read their recommendations, and testimonials, it would seem as though the Almighty had given over the control of the fruit crops to those extortionists, and patent venders, &c. Be not deceived; better have nothing to do with patent tree and vine remedies. If they have a good remedy, why not give it freely for the good of the whole country, and then they would indeed be public benefactors, and the world would call them blessed.

J. B. E.

## Entomological.

### EXTERMINATION OF NOXIOUS INSECTS.

Noxious insects are appearing in greater numbers every season. Almost every article of human food must be protected while the tender germs of useful plants are springing into life, or while the buds are unfolding or the fruit being developed. There seems to be a larva, or grub, or beetle, or worm to devour everything that grows,

from the field crops of golden grain to all kinds of fruit and vegetables.

Joseph Treat, of Vineland, New Jersey, has written a pamphlet, price twelve cents, in which he suggests an effectual method for the extermination of insects. He writes to the *Times* thus:

"Fruit can everywhere be raised, in spite of all insects. Noxious insects can be destroyed, and a new era in fruit growing introduced. Instead of so many insects proving that we can never get rid of them, it is their very multiplicity which insures that we shall get rid of them, by making their extermination an absolute necessity. Nature tells us how this may be accomplished by the instincts implanted in the insects themselves. We never should have had the insects in the first place if we had not departed from Nature in the matter of birds. It is only because, for more than two hundred years, we have gone on, persistently cutting away the timber everywhere, and driving the birds before us in all directions, that at last the insects have taken the place of the birds and destroyed the balance of the system. One thousand pairs of moths will produce 300,000 caterpillars the first year, 45,000,000 the second, and 6,750,000,000 the third year. One bird, in a single year, will destroy or prevent the existence of 1,000,000 of caterpillars; a pair of birds, 2,000,000, and the three, four or five young birds, 3,000,000 more, making 5,000,000 of caterpillars which one family of birds will destroy in a year. There ought to be more birds in every garden and orchard than in the woods.

#### HOUSES FOR BIRDS.

There ought to be birds in boxes all around the premises—boxes right among and over all beds or patches of vegetables and small fruits, Irish potatoes, sweet potatoes, melons, strawberries, raspberries and blackberries, as well as among the grapes. Small boxes or houses for birds, should be placed in fruit trees, groves and thickets. Where only ten birds have heretofore existed, there should be a hundred; and perhaps in the future there will be a thousand. But we can destroy the insects even without birds. The simplest and cheapest means is molasses mixed with water, put in pans, crocks, old tin or wooden pails, or troughs, placed in gardens and orchards over night, to drown the multitudes of moths (or millers, as they are commonly called) that parent all the most destructive caterpillars. The moths are literally crazy to get into the sweetened water. They cannot be kept out of it. Insects of all kinds will drown by the hundred and thousand in such a liquid, till there will be none left. One gallon of black molasses, unfit for any culinary purpose, will suffice for a small farm from

early Spring till Fall, the same water answering from week to week, only requiring to have the dead moths removed. The vessels containing the sweet liquid should be covered by day to preserve from bees, and to be filled up and kept sweet, as it gradually wastes away. The same sweetened water, on plates, with cobalt, ratsbane, or anything similar chemical in it, will poison the moths.

#### EXTERMINATING INSECTS BY FIRE.

There is a still more universal means, for Nature has made every insect a fire worshipper. Little fires in gardens and orchards, at early twilight, burning ten or fifteen minutes, will attract and consume swarms of moths, beetles, bugs and curculios, and thus save the crop of fruit. Light wood obtained and split fine beforehand, enough for the whole season, or flat-bottomed tin lamps, like those of the 'campaign torches,' will be equal to money at a hundred per cent. in every man's pocket who owns either garden or orchard. And picking up and boiling all the fallen fruit to kill the larvæ in it, will make two or three hundred to one less insect next year. These means forestall all ordinary ones, as hand picking, sprinkling with oil, cutting out borers, destroying nests on trees, providing toads, turtles, chickens, and ducks that eat every tomato-worm, and turkeys that gobble the new potato-bug of the West—killing the parents, and thus preventing their increase. This is like beginning at the beginning and striking at the root of this great evil.—The means are literally so many that they become superfluous; half of them will subserve a more satisfactory purpose. What we do not kill in one way, we shall in another. We might have known that we should find means, because it would become a necessity, as necessity is that motive power which has done everything else. It is that which has given us the plow, which we should never have had if trees had borne loaves of bread."

The foregoing, which we copy entire from the agricultural column of a weekly cotemporary, contains many rational sentiments and useful suggestions, but at the same time, little else than has been entertained and practiced in England, and some parts of our own country, for a series of years; and, therefore, on the whole, it is neither entirely new, nor yet a finality in its details. For instance, in all the insects which we have been enabled to attract at night by lamps or fires—amounting to many thousands through a long series of years—we cannot recollect to have counted a half dozen *curculios* among the whole of them. Although such contrivances may bring



countless thousands of nightflying moths, and predacious beetles, as well as many of the woodbor-ing kinds, yet we doubt if there will be many of the true *curculionide* entrapped thereby. In this respect they seem to differ from other *Coleoptera*, and therefore they will have to be captured or circumvented by other means. In our opinion, jarring the fruit trees, and picking up and destroying the fallen fruit two or three times a day throughout the entire months of May and June, will be more efficacious in respect to them. The suggestions in regard to forests and birds are no doubt the true cause of a redundancy of insects, but even if this were universally acknowledged and acted upon, it would require time before the balance in nature, which has thus been destroyed, could be restored again. But, as the evil exists, and must be met, no means should be left unemployed to reduce the number of noxious insects, and that too, efficiently, and without unnecessary delay. What are not destroyed in one way, or by one set of means, may be destroyed in another, so that no rational remedy should be left untried. But the operators should so far acquaint themselves with the true characters of insects, as not, at the same time, to also destroy their friends, for these, if uninterrupted and not interfered with, will perform the work more thoroughly than it can possibly be done by the aid of human heads and hands.

S. S. R.

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## Editorial.

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WE sometimes rather regret that the "letter press" capacity of our journal is so limited, as to exclude from its columns the many pages of excellent "selected matter" which fall under our observation in the various kindred publications throughout our wide extended country. Many of our readers and subscribers may doubtless wish this were otherwise, and we cannot say, that to a certain extent, we do not sympathize with them in that wish. However much the necessity for such a state of things may exist now, we sincerely hope it may not be so always, unless experience may demonstrate that it should not be otherwise, and as a reasonable beacon of that hope, we feel warranted in promising our subscribers that when the subscription and advertising lists of our journal are increased a hundred per cent., they will find its letter press capacity increased a hundred fold. But, all other things being equal, it was the original design, that the columns of the *Farmer* should contain mainly or entirely original matter, that it should be a reflector of the experiences and thoughts of the cultivators of the county of Lan-

caster. Not, by any means, that they are presumptuous enough to assert that they know more than any other people, or that they believe what they do know, is better than any other body's knowledge, but that, right or wrong, it is just what their own knowledge and experience has taught them in the cultivation of the soil, in their various localities. Hints of the mode and manner of doing things, by those beyond our borders, and also their legitimate results, are valuable so far as they go, but we never can have the implicit confidence in them, that we would have, if they were wrought by our neighbor and on a contiguous farm.

General modes of cultivation and their results, may have a general and wide extended application, but, in their details, they never can supercede local modes; and it is for this very reason that a local journal may be more valuable to a farmer than a foreign one. It was this aspect of the case that first suggested the publication of the *Lancaster Farmer*, and it is this attitude that will continue to make it the medium of local communication. Nothing is more common, in perusing the contents of the various agricultural and horticultural journals of our country, than to meet with complaints, that the modes of culture recommended for one particular locality, have been altogether unavailable in another. We know that "circumstances often alter cases," but in any event, and as a general rule, circumstances never can, or never ought, to take precedence of *centres*. There are internal or local conditions that are altogether independent of external or foreign ones. These can be better developed through local experiences, local modes of culture, and local intercommunication. All this may be done, without discarding or unheeding the superior suggestions of other localities, but they should never lead to the adoption of inferior ones, merely *because* they are foreign. We hope therefore to see the cultivators of Lancaster county self-reliant, but that they should at the same time "prove all things," and "hold fast that which is good." We know that by their cotemporaries, they are sometimes called "slow," but as it has never yet been determined that the man upon whose head the brick fell and killed, was walking too fast or too slow to avoid it, they therefore stand on an equal footing with "faster" people. We hope also that our contributors will continue to give us *their* thoughts and experiences, on all matters relating to the farm, the orchard, and the fireside.

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OUR subscribers will please bear in mind THE FARMER is payable in advance. As material is very high, and labor cash, will our patrons be kind enough to respond?



### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Society met in the Orphans' Court Room, in the city of Lancaster, Monday, February 1st, at 2 o'clock P. M.

In the absence of the President, Levi S. Reist, 1st Vice President, took the Chair and called the meeting to order, after which the minutes of the last meeting were read and approved *sans dissentiment*.

The following new members were nominated, and on motion elected, viz: Dr. Joseph Gibbons, Aaron H. Summy, Esaias Billingsfelt, Elias Brackbill and John G. Rush. Most of the new members were present and signed the Constitution.

Levi S. Reist, who had been elected delegate, at the January meeting, to represent the Society at the meeting of the Board of Managers of the "East Penna. Experimental Farm," in Chester County, stated that he had been unable to be present at said meeting. He, however, had met Thos. Harvey, Superintendent of the Farm, who had informed him that they had thirty-six different kinds of wheat on trial and sown for experiment. Mr. Reist was unable to be present at the meeting, owing to other pressing engagements.

S. S. Rathvon now proceeded to read an extract, taken from the *Revue des Deux Mondes* on Beetle Hunting. The extract, although very lengthy, was read out of regard to its intrinsic merit, and Mr. Rathvon designs preparing an abstract of it for publication in the LANCASTER FARMER.

Jacob Stauffer next proceeded to read an essay upon Botany, and did it in his best manner, and was, on motion, asked for a copy for publication in the FARMER. Peter S. Reist was next invited to read an essay upon wheat culture and the soils necessary for its successful cultivation.

Mr. John Carter, who was understood to be present and to represent the "Experimental Farm School in Chester County," was on invitation requested to address the Society. He did so quite briefly, and detailed the workings of the Farm School in our neighboring county. He remarked the great necessity there was for an appropriation by the Legislature in aid of the new enterprise. A petition was in his possession, directed to the Penna. Legislature, and he asked the members of the Society to sign the same and give it the weight of their influence.

Jacob B. Garber immediately rose and offered the following resolution:

*Resolved*, That we, the undersigned members of the Lancaster County Agricultural and Horticultural Society fully approve of the above petition, and strongly urge the members of the Legislature to grant the application of the managers of the Chester County Experimental Farm.

Levi S. Reist urged the adoption of the above resolution, and spoke of the great advantage it might be to the farming community of Lancaster County, owing to its contiguity to our borders. Farmers might, if this Chester County enterprise be successfully established, with little expense visit it, and see and learn by observation many things otherwise difficult to be comprehended, and thus correct scientific information would be more generally diffused amongst our Lancaster County Agriculturists. In the course of his remarks, Mr. Reist referred to the fact of the State of Massachusetts having lately appropriated the sum of \$30,000 for the propagation of fish.

C. L. Hunsecker, of Manheim, likewise spoke a few words in favor of the resolution, and believed the money could not be expended to better purpose.

The resolution was then unanimously adopted.

Engle and Brother, of Marietta, exhibited some very handsome apples, viz: The North Carolina Queen, Smith's Cider and the Lacker varieties.

The Society, after the transaction of the remaining current business, entertained itself for a time in the testing of the fruit on exhibition and in social converse. The apples presented by Engle and Brother were pronounced of fine quality, especially Smith's Cider.

Society then, on motion, adjourned until the 1st Monday of March.

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WE have received the new seed catalogue of Edward J. Evans, of York, Pa. In his catalogue, Mr. Evans says: "By special arrangement with Mr. James Vick, of Rochester, New York, we are prepared to furnish our customers all his choice flower seeds at his regular prices, and will mail to any address, on receipt of ten cents, his handsomely illustrated *Descriptive Catalogue and Guide to the Flower Garden* for 1869."

Ferre, Batchelder & Co's *Catalogue of Seeds and Vegetable and Flower Garden Manual*, for 1869, has also been sent us. This is one of the largest catalogues we have yet seen. Address, Springfield, Massachusetts.

Hoopes' Brother & Thomas, of West Chester, Pa., have sent us their *Annual Trade List of the Cherry Hill Nurseries* for the Spring of 1869. They offer the charming Rocky Mountain novelty, the *Aquilegia Coerulea*, which the *American Horticultural Annual* describes as "the Queen of Columbines," and the most beautiful of all herbaceous plants." Young plants \$1.00 each, and \$9.00 per dozen.

## Miscellaneous.

### FISH CULTURE.

#### Salmon Eggs Imported into Massachusetts.

Nearly 250,000 salmon eggs arrived on Friday last at the Cold Spring trout ponds, Charlestown, Mass., from the Miramichi salmon-breeding works at New Brunswick. They were packed in baskets of wet moss, well surrounded with straw, and had traveled 120 miles on sleds, 320 by rail, and 280 miles by water; but they were so well protected by the straw from the cold, and from the jarring incident to traveling, that they arrived in good condition, so far as examined. They were also found to be well impregnated and sufficiently advanced to hatch, at the present rate of development, early in January. The gentlemen engaged in getting them at Miramichi met with a prejudice against their operations on the part of that community, so violent, as to nearly compel them several times to give up the enterprise altogether. The Canadian Government was quite unwilling to give permission to take the spawn at all, and only granted it very reluctantly at last, on condition that one-half of the ova taken should be deemed the property of the Crown, and should be hatched out at Miramichi for the benefit of that river.

The above paragraph, taken from the columns of a cotemporary, contains nothing specially new, for the transportation of eggs and the culture of fish has been successfully conducted for a number of years in Europe, and also to some extent in some of our eastern States. It has also been successful on a limited scale in our own county, but we should like to see it generally introduced, and if we are not very much mistaken, the child now lives who will see the culture of fish in this county as successful and as common as the cultivation of strawberries at the present time. Just think of the immense quantity of fish consumed annually in this county, and of the immense sums of money expended in procuring them. Along our whole southwestern border we have the noble Susquehanna, than which there is not a more genial stream in which to rear the finny tribes on this continent. The shad that ascended that stream, within our own recollection, were considered the finest and most delicious of any produced in our American waters. This is owing to the pure and fresh character of the aqueous element composing it, which tumbles down from the thousands of brooks and mountain rills which famify nearly all parts of the great State of Pennsylvania. Then there are the Conestoga, Chiques, Pequea, Octoraro, Conoy, Hammer, Mill, and a hundred other smaller creeks and streams that might be made available for such a purpose by a little labor and a reasonable moiety of legislative restriction and

protection. If it is at all desirable to bring our county back again to an age of moderate prices, and wholesome recreations, we must make an effort to develop all her natural resources. It is a great mistake for us to perpetrate the bull, that "we should do nothing for posterity because posterity can do nothing for us." Posterity may do much for us in the amelioration of the condition of our children and our children's children. It behooves us, therefore, to work for posterity if we wish to disenthral ourselves from an all-pervading selfishness which is fast sapping the foundation of our social and moral structure as a progressive people. Therefore, let us have fish.

R.

### STATE AGRICULTURAL COLLEGE.

We are glad to learn, as will all the original friends of the Farmers' High School, that Mr. Burrowes has accepted the Presidency of the State Agricultural College, and has set out boldly to re-organize it, and with a view to make it subserve the purposes it was originally intended to do. We have done much, first to establish, and afterwards to sustain this institution, and withdrew our support only when we regarded the course of the Board of Managers as tending to destroy it rather than build it up. But we are again willing to lend it our humble aid in the hope that President Burrowes, whose antecedents could not be better, will be able to "reconstruct" it, and make it of marked importance to the agricultural interests of the Commonwealth.

We print in another column the official college advertisement, and ask for it the attention of our readers. It will be seen that the sons of all inhabitants of the State qualified for admission to the college, stand on precisely an equal footing, and it is expected that they will all understand and avail themselves of the advantage.

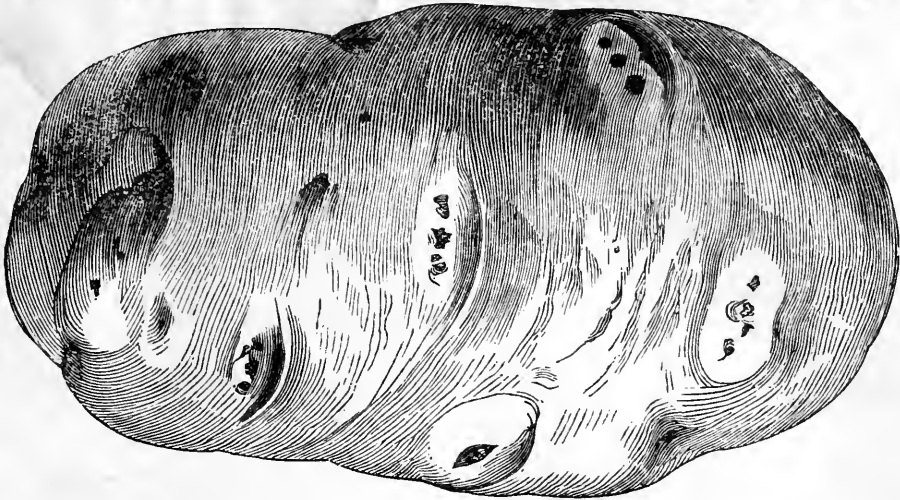
We have room this week only to make the following extract from a general statement of the nature of the institution offered by the President:

"In the term Farming or Agriculture, as here used, are included not only the processes of field-crop raising, the breeding and care of live stock, the nature and application of manures, etc., but also the principles of Horticulture or Gardening, of Arboriculture, or the propagation and care of fruit, forest and ornamental trees, and of all the other employments and interests of rural husbandry.

"So, in the term Mechanics, are embraced Mechanical, Civil and Mining Engineering and Architecture, as far as impartible by instruction in the related sciences, and by as much of practice in the Shop, Laboratory and Field, as the nature of the institution and of these pursuits will permit."

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We are prepared to fill orders for Spring at the following prices, cash to accompany the order:  
*One Pound, \$1.00, Three Pounds, \$2.00 by Mail Postpaid.*  
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*One Bushel, \$15.00, One Barrel \$40.00 " " "*

(60 pounds to the bushel, 165 pounds to the barrel.)

The following varieties can be supplied in large or small quantities:

Early Goodrich,	per bushel, \$1.50,	per barrel, 165 lbs. \$4.00.
Mich. White Sprout, Early,	" 1.50.	
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Maj. JAS. E. RICKSECKER, City Treasurer.

CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank.

N. ELLMAKER, Esq., Attorney.

Messrs. BAIR & SHENK, Bankers.

B. F. BAER, Esq., Attorney.

Judge A. L. HAYES.

J. F. LONG & SON, Druggists.

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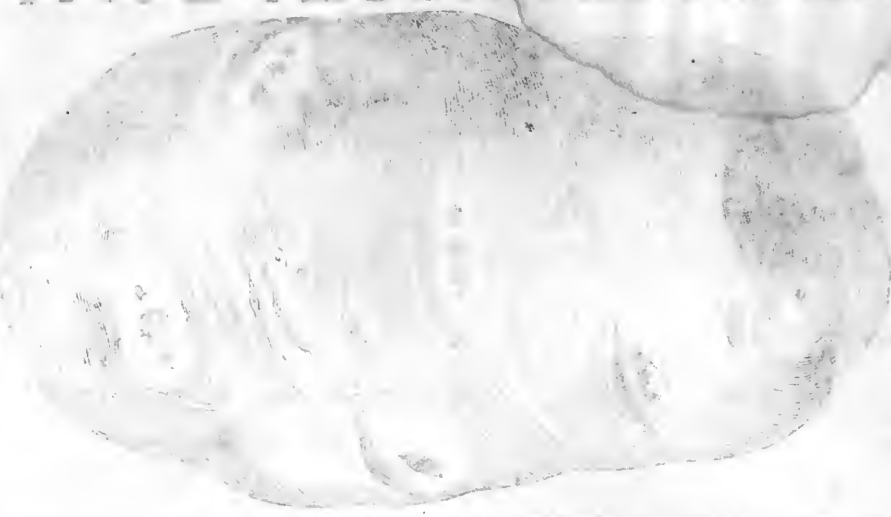
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TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent of the Act of Assembly, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.*

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,  
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**LATEST IMPROVED GRAIN DRILLS.**

Also, Grain Drills with Guano attached, warranted to give satisfaction. *Rockaway Fans, Cider Mills, Crushers and Graters*, for horse or hand power, which will grind a bushel of apples per minute by horse power, and are warranted to do it well. We would also inform Coachmakers that we have put up in our Shop two of the latest improved *Spoke Machines, or Lathes*, and are fully prepared to furnish the best quality of SPOKES of all kinds, sizes, dry or part dry, and warranted to be a good article. We buy none but the best Spokes, and have now on hand **100,000 SPOKES**. BENT FELLOWS of all sizes; SHAFTS and CARRIAGE POLES, BOWS, &c., of reasonable stuff, constantly on hand.

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NOTICE TO FARMERS AND MECHANICS.—Planing and Sawing done at the shortest notice. We have one of the best and latest improved Surface Planes for operation.

**KEELER & SHAEFFER, Lancaster, Pa.**

LANCASTER, June 25th, 1863.

EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business. H. B. PARRY.

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**DENTIST,**

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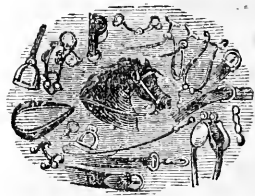
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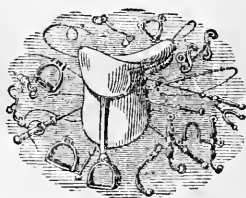
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IS NOW OFFERED TO THE PEOPLE OF

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It is superior to other coverings for all kinds of buildings for these reasons:

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THE  
**Lancaster Farmer**

VOL. I.

LANCASTER, PA., APRIL, 1869.

No. 4.

**The Lancaster Farmer,**

PUBLISHED MONTHLY BY

WYLLIE & GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

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All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

All advertisements, subscriptions and remittances, to Wyllie & Griest, Printers.

**Essays.**

**VEGETABLE PHYSIOLOGY.**

**THE CELL IN THE PROCESS OF GENERATION.**

The subject of the sexes in vegetation is one which has for some time claimed the attention, not only of Naturalists, but also of Farmers and Horticulturalists in our own county. Its import in our series of articles must, therefore, be acknowledged, and reaching as it does, away into embryonic research, and coming properly within the province of cellular life, we deem its consideration in the present connection as right and proper. This, article therefore, will be confined to the remote or structural aspect of the subject, treating it in the cell alone.

All organic structures endowed with *vital activity*, must possess the function of perpetuation. In this, in an especial manner, do all living beings, whether animal or vegetable, differ from the inert bodies which surround them. Whilst the mineral, when not changed by art or violence, remains for ages with no perceptible enlargement, or no power of reproduction, the common lot of all organized matter is death and decay. Each individual object successively disappears from the surface of the earth, and to provide for this drain

upon the vital power of the universe, the function of reproduction is co-extensive with it, and must be alike potential in the animal, and the vegetable.

We have already seen, that in those simple forms of organic life, where each cell seems to live for itself alone, and is capable of performing its function almost independently of the rest, there is this property, and the death of the parent becomes necessary to the liberation of the germ, from which a new race springs up.

But in the higher and more complex organism, there are cells set apart for various physiological purposes. These often perform their functions without, in any way, interfering with the general life of the structure. In the animal there are organs of reproduction, in the vegetable, the process is reached by certain cells containing the germ from which the race is continued.

These cells are inherent in the formation of the plant, but during its growth, and its life, indeed, they are devoted to this special and determinate function. We do not mean to intimate, that the cells of those higher tribes are capable of this operation, as those of the lower classes are, where they multiply almost to an unlimited extent, in the separate cells, where heat and moisture, and a proper aliment are supplied. There is a *mutual dependence* between the component cells, and although they are able to perform their functions of generation separately, and independently as it were from the action of the other cell tissue in the same organism, they cannot maintain a distinct life separated from one another.

The true generative process, according to *Carpenter*, seems to consist, throughout the vegetable kingdom, in the reunion of the contents of two cells. These cells after having been separated during the process of development, effect this reunion, the result of which a germ is formed, which is usually very different in its characters and properties, from either of the cells whose contents have contributed to form it. "This process, (he says,) has been observed to take place in the vegetable kingdom, under these principle forms, which seem to be characteristic of the lowest *criptogamia*, of the higher *criptogamia*, and of the higher *pha*

*nerogamia*, respectively. The first of these presents itself in those simple cellular plants, in which, whether the cells remain in connection or not, their endowments are all of the same nature.

"At a certain time of the year, in each species, the cells approach one another in pairs, and their coloured contents are intermingled either by the rupture of both cells, or by the formation of a direct communication from the interior of one, to that of the other, in which case the union of the contents of the two may take place either in the connecting channel, or in one of the pairs of the cells.

"Of this process, which is known as *conjugation*, the result is the formation of a body known as a *sporangium*, which may be considered as the first product of the true generative process; and from this sporangium, which is a single cell, or a pair or cluster of cells, a new generation is developed by a subsequent process of fission and multiplication. There is here no definite distinction of the sexes, the conjugating cells being apparently alike in their endowments; such a distinction is shadowed forth, however, where the sporangium is developed within one of them.

"The second form of the true generative process, is seen even in the higher Algæ; and, although the extent of its prevalence has not yet been clearly determined, it is probably common to the Liverworts, Mosses, and Ferns, it being in the last of these groups, that it has been most satisfactorily made out. In conformity with the separation or specialization of organs, which is characteristic of those plants, we find that the generative power is now limited to certain small parts of them, and that these produce two orders of cells, very distinct in their endowments, which may be called, respectively, *sperm-cells* and *germ-cells*. It is from the latter that the new plant originates; but this it can only do, when the fertilizing influence of the former has been conveyed to it; and the provision for the purpose is very remarkable. The sperm cells, developed within their bodies, termed *antheridia*, form in their interior, as their characteristic products, minute spirally-coiled filaments, usually furnished with cilia at one extremity, and bearing a very close resemblance to the spermatozoa of animals.— These when liberated from the cells within which they were formed, possess a very active power of movement, in virtue of which they make their way to the germ cells; and when they have impinged against them, there is reason to believe they dissolve away, and that the product of their diffuence is absorbed into the germ-cells and mingles with the contents of the latter, the for-

mation of a germ, or seed, being the result of this intermixture. Here, then, we have the distinction of sexes well marked; but both sperm-cells and germ-cells are usually developed in the same organism, and are alike the product of a single original germ."

The process just described by this author, is peculiar alone to the *criptogamic* series, and whilst a somewhat similar process takes place in flowering plants, there is nevertheless this marked and very important difference. In those just noticed, being of a simpler form of organization, the fertilized germ is thrown at once upon the soil, and made to depend upon its own power of absorption and assimilation, for the growth necessary to give it a character as a plant of its peculiar species. Whilst in the *phanerogamia*, or flowering plants, by virtue of their higher and more complex organization, there is *dependency*. The germ seems to be matured by a store of aliment laid up in the seed, which gives it life until its leaves have been evolved, and its root-fibres have penetrated the soil, when it becomes capable of absorbing and assimilating nutriment for its own development.

"In this latter class, there is the same distinction between sperm-cells and germ-cells, but the mode in which the action of the former upon the latter is brought about, is very different. The sperm-cell, which is known as the *pollen-grain*, and is developed in the anthers of the flower, does not here evolve self-moving filaments, but, when it falls upon the apex of the style, puts forth long tubes which insinuate themselves down between its loosely-connected tissues, until they reach the ovary at its base. Here they meet with the ovules, which are in reality germ-cells imbedded in a mass of nutriment stored up by the parent; and the pollen-tube, entering the micropyle or foramen of the ovule, penetrates into such close approximation to the germ-cells contained within it, that its contents find a ready passage by endosmosis, or absorption, into the latter." In this process we have the same phenomenon of the intermixture of the contents of those cells, only in a manner characteristic of a higher order of organization. "In process of time, its generative apparatus is evolved; and here, too, we find, that the two sets of sexual organs are usually developed in the same organism, it being only a small proportion of *phanerogamia* that have the male or stamiferous flowers, and the female or pistilline, restricted to different individuals."

The *root* as an organ of vegetation, will be the subject of our next communication.

## ECONOMY OF BIRDS--THE ROBIN.

## AGRICULTURALLY AND HORTICULTURALLY CONSIDERED.

As the subject of *birds*, in an economic point of view, has engaged the attention of Agriculturists and Horticulturists for some time past, and as a movement has recently been made by some Agricultural Societies in this and other States, towards the importation of Insectivorous birds into the United States, a few remarks upon this interesting subject may be appropriate and useful at this time. Doubtless much of the prejudice existing *for* and *against* birds is founded upon partial or superficial observations,—some people claiming too much for them, and others according too little credit to them. Not being situated so as to illustrate from my own practical experience the benefits and injuries sustained by Agriculture and Horticulture through the feathered tribes, I will confine my remarks mainly to observations made by Mr. Edward A. Samuels, an ornithologist of some reputation in Massachusetts, and published in the *Agricultural Report* for 1869, at Washington city; an advanced copy of which I was fortunate enough to secure lately.

Without adverting specially—any more than merely naming them—to Swallows, Nighthawks, Whip-poor-Wills, Warblers, Wrens, King-birds, and many others that are purely insectivorous birds, feeding exclusively on insects, and remaining with us only so long as they can obtain insects; and which leave our parts as soon as the stock of insects become exhausted, to seek more favorable localities farther South—I will pass on to the consideration of the Common Robin—the *Turdus migratorius* of naturalists—about the habits of which there has been considerable controversy, and at this time, which has as many human enemies as friends. What I say about the *Robin* will apply equally to all the members of the Turdine family, which includes also the various species of Thrushes, Catbirds, Mockingbirds, and others; all of which, excepting, perhaps, the last named, have been familiar to us from the earliest days of our boyhood, and the pity is, that we are not more familiar with them *now*, since we have become men.

Taking the Robin, then, as the standard of our illustrations, according to the experience of a practical ornithologist—one who makes the study of the habits of the feathered tribes his speciality—the result is as follows: Mr. Samuels remarks that, beginning with the month of *January*, and continuing through *February*, from an examination of the stomachs of these birds, he found them to contain two parts of barberries; three of in-

sects; three of seeds; three of insect larvae, and two of cedar berries. Considering the seeds and berries of little or no value to the Agriculturist, forming therefore a neutral element, and supposing that some of the insects destroyed may have been of the beneficial kinds, the Robins during these fifty-nine days, of the two months named, may be regarded as having been beneficial five-fourteenths of the time, or about twenty-one days, injurious about four and a half days, and neutral the remainder of the time. In the month of *March* a larger number of birds were examined with more favorable results. In *April* he found these birds beneficial equal to fourteen days, injurious two and a half days, and neutral the remainder of the month. In *May* the result was nearly the same as in *April*, with a slight increase on the beneficial side of the scale.

But in *June* these birds are in a high degree beneficial; for it is during this month that the young are reared, which require to be fed on animal food entirely, from “early dawn to dewy eve,” consisting principally of earth-worms and soft *larvæ*; such, for instance, as grubs, cutworms, caterpillars, &c. It will also be remembered that although the Robin feeds largely on earth-worms during the months of *April* and *May*, yet in *June* the heat of the sun has increased so much, that these worms sink too deep down into the earth for the bird to obtain them, and therefore, it is, from the very necessity of the case, compelled to rear its young family on various kinds of insect *larvæ*; and the quantity required for that purpose, as I shall show presently, is not a small one, but, on the contrary, astonishingly large.

Mr. Samuels speaks in an interesting manner of the singular instinct of the Robin, in being able to detect the presence of cutworms and grubs, even where they are an inch below the surface of the soil, and his dexterity in unearthing them, a feat in which he never fails. I have myself, on many occasions, noticed this bird, hopping through the young corn and cabbage patches, suddenly turning to a hill, that was at least a foot to the right or left of him, and digging up with his beak a worm of some kind, and bearing it off to his nest to feed his ravenous young.

Although this fact may be patent to many of us, yet, perhaps, we have not gone to the trouble to note how often the Robin repeats this operation in a given length of time—at least I have not been so situated lately as to have done so. The observer alluded to above records the result of the scavenging of two Robins that had built a nest, and reared two families near his residence, during the months of *June*, *July* and *August*. This pair destroyed, by actual count, the one

twenty-seven and the other twenty-four grubs and cutworms in the lapse of a single hour; and on another occasion, the one twenty-six and the other thirty in the same period of time. Within the last ten years I have myself made similar observations on a pair of Blue-birds and a pair of Wrens, with a similar result; although I am not prepared to say, in my cases, that the worms they destroyed were *cutworms*, but so far as I could discover, they were small caterpillars and earth worms, together with some winged insects. Mr. S. then proceeds to remark that the season being very dry and earth-worms hard to obtain, all the insects his birds destroyed were cutworms and smooth caterpillars. Their family consisted, at the time his observations were made, of four half-grown young ones, who, during some portions of the day, consumed as high as forty of these worms in a single hour. This may seem incredible, but when it is remembered that caterpillars, cutworms, and other insect larvæ are composed largely, or almost entirely of juices, and their digestion easy, the matter will not seem so difficult to comprehend.

In this connection, I believe, I cannot do better than to record briefly the experiments, with two young robins, made by Prof. Treadwell, of Cambridge, Mass. When caught the birds were quite young, the tail feathers being less than an inch in length, and the weight of each, about twenty-five penny weights, or an ounce and a quarter. Both birds were plump and vigorous, and no doubt had been well fed by the parent birds. He commenced by feeding them earth worms, giving each bird three the first night. The second day he gave them each ten worms. Thinking this amount beyond what the parents could have supplied, he limited them to this number. On the third day he gave them only eight worms each, but in the afternoon he found that one of them was becoming feeble, and finally died. On opening it he found the crop, gizzard and intestines entirely empty, so that the bird had evidently died for want of food. The other bird being still vigorous, he removed to a warmer place, thinking it might lessen its desire for food, giving it the third day fifteen worms, the fourth twenty-four, the fifth twenty-five, and on the sixth and seventh, thirty and thirty-one worms; but all these seemed insufficient, and the bird seemed to be losing its plumpness and weight. On the fifteenth day he tried a small quantity of raw meat, and finding it readily appropriated, he increased the quantity. By the table kept, it appeared that although the food of the bird was increased to the value of forty worms, on the eleventh day, yet it rather fell off in weight. It

was not until the fourteenth day, when he ate sixty-eight worms, that he began to increase in weight. On this day, his weight was twenty-four pennyweights, he therefore ate forty-one per cent more than his own weight in twelve hours. The length of these worms, if laid end to end would have been fourteen feet, or about ten times the length of the intestines. Now the question naturally suggests itself, "how is this immense amount of food, required by the young, supplied? And the answer is, "solely and entirely by the continued labor of the parent birds. At the foregoing rate, a family of four young robins require two hundred and fifty worms for their daily food, without including the additional number for the support of the parents.

With these facts before us, it becomes apparent, that the robin feeds almost entirely upon insect food during the month of June, and that during that month at least, it is beneficial. This food consists mainly of larvæ of different kinds; but few hardshelled insects; and but few seeds or berries, except strawberries, being available; therefore, we may safely conclude that it is beneficial twenty-four days, injurious three days, and neutral the balance of the month. In July this bird is perhaps the most injurious. It is now that cherries and other small fruit are ripe, and the young birds are out of their nests, subsisting largely upon these and insects, in the proportion of, cherries four, worms two, berries two. But it must also be remembered that in this month they commence rearing their second brood, when of course their injuries are over balanced by their benefits. We may, therefore, safely conclude that during July the robin is beneficial nine days, injurious eighteen days, and neutral four days. During August the robins feed upon small fruits, and principally upon insects, larvæ, worms and spiders, showing that it is beneficial about twelve days, injurious about nine days, and neutral about ten days. In September and October, wild cherries and other wild fruits, and seeds, furnish a large share of its subsistence, but grasshoppers and other insects are eaten in large numbers. During these two months, therefore, it may be considered as being beneficial thirty days, injurious eighteen, and neutral thirteen days. During November and December, at which period most of the birds have migrated to the Southern States, the robins remaining in the north subsist principally upon seeds of various shrubs, and such berries as they may have access to; and as insects are few, this bird may be considered, in an economical point of view, during these two months, as entirely neutral. These dates and calculations are based on the latitude of Massachu-

setts; therefore, for the state of Pennsylvania we may place them at about ten days earlier, and the general results will be the same. In summing up the year, therefore, we find that this bird is beneficial one hundred and forty-two days; injurious sixty days; and neutral one hundred and sixty-three days.

It is hardly fair, however, to put down all this amount of injury as *real*, for among fruit growers, I presume there are but few, who would not allow the robin a reasonable share of their fruit, as a compensation for the benefit they receive from his earnest labors throughout the year. And no doubt, if we were to ask those who have large cherry orchards, whether this bird did not destroy a great many of their cherries? the answer would be yes; but if *he* did not eat them, many of them would rot upon the trees at any rate. To show, however, that the robin does not *prefer* fruit to insects, Mr. Samuels relates an instance, where he was passing through a part of the country where there was a large cherry crop at the time. Of course he found these birds very busy among them; but, for one robin he saw on the trees, he saw two upon a piece of newly plowed ground near it, as busy in feeding upon the insects, that had been turned up by the plough. To the question he put the owner, as to whether the robins were not very troublesome, he received the reply "Yes, but I began to break up this piece of ground, and it seemed to me that all the robins in the neighborhood immediately flocked into it." To the question whether he thought the robin *preferred* worms to cherries? his reply was, "certainly, and if he did not, I could not afford to take my hands off haying, planting and hoeing, for the sake of marketing a few cherries. I take what I want, and give my neighbors and the birds the rest, but I notice that half the crop will rot on the trees at any rate?" To show the folly of destroying useful birds, it may be remarked, that the young of *all* the smaller kinds are fed upon soft caterpillars, grubs, and insects exclusively, while they are in the nest. Mr. Bradley says, that a pair of sparrows will destroy three thousand three hundred and sixty caterpillars for a week's family supply. For four weeks, at the lowest calculation, the young of our sparrows are fed upon this diet exclusively, and the family in that period of time would therefore eat thirteen thousand four hundred and forty insects, and not only this, but if the half of these insects were females, and each was eventually to deposit but one hundred eggs, from which that number of larvæ in time were to breed, the gross number would be one million four hundred and forty four thousand, which are thus prevented from coming into existence, by a single

family of sparrows. The robin, we have seen, performs a similar service. A pair of thrushes, which belong to the same natural family that the robin does, have been seen to carry to their nest over one hundred insects, principally caterpillars, in a single hour. If we suppose that this family is fed but six hours in a day, the number of insects destroyed would be six hundred daily, while in the nest; which being, say three weeks, the amount would be at least twelve thousand, and before they would leave in the fall, at only fifty insects for the daily allowance of each bird, they would kill in the aggregate at least twenty thousand more; which, according to the foregoing calculation upon the reproduction of insects, would prevent three million two hundred thousand from coming into being, and that, too, by a single brood of thrushes. To show that these calculations upon the reproductive powers of insects are based upon a very low estimate, I need only say, that I have myself often counted from three to five hundred eggs, deposited by a single female and some of them are known to deposit a thousand and more. Now here is just where the real and the merely apparent truth comes in, in the economy of nature. Superficially considered, many things are regarded as positive, and even great evils, whereas, they are, from a more thorough consideration of the subject, only negative evils, evils permitted that greater ones may be prevented. This is eminently so in regard to some seemingly injurious birds, of which the robin is said to be one, and in dealing with him, I think if we should "nothing *extenuate*," we also ought to "nothing set down in *malice*." When we, therefore, see a robin with a cherry in his mouth, we should not think so much of the loss of the cherry, as of the possible destruction of twenty-five or thirty embryotic *curculios* that may be within it; and when we see him with a cut-worm or caterpillar between his beaks, we should not limit his services so much to a single specimen of these insect enemies, as to the one, two, or three hundred of these pests, which are thereby prevented from coming into visible and tangible being.

S. S. R.

## Agricultural.

### HOW TO IMPROVE EXHAUSTED LAND.

We often hear how this or that poor farm, in the vicinity of a large town or city, has been improved; generally by some retired merchant or professional man, who is able to use his surplus funds to purchase guano, bone-dust, phosphate of



lime, or offal and sewerage from such city, to be used as fertilizers of said farms. The benefit of such knowledge is, however, mainly advantageous to those who are in similar circumstances. We think a more commendable service would be to ascertain the cheapest and best manner to improve a poor farm, owned by a man of small means; for instance, one who has purchased one hundred acres, at from fifty to sixty dollars an acre, and is only able to pay \$2500 on it, to secure the purchase. Now, he owes the half or more of the original amount, and has to improve his land and pay his debt. If he succeeds, at the end of ten years, to free his farm from debt, and in the meantime to support and educate his family, he certainly is entitled to more credit than the retired merchant or rich professional man. We have seen the very poorest land, overgrown with weeds and brambles, improved and made to yield generously, by a thin coat of lime alone, as a top dressing, and then plowed under, and well sowed with red-clover. If the clover is left on the fields, and plowed down again, it will produce either a good crop of wheat or corn. We have immense tracts of exhausted lands in our country, reclaimable by those who have pockets full of money, but what we want, is to know how poor men may avail themselves of the advantages of cheap and productive farms.

L. S. R.

### CROSSING OR HYBRIDIZING WHEAT.

MESSEURS EDITORS: We hear many complaints from all sections of our widely extended country, of the deterioration and partial failure of the wheat crop. Many and various are the theories of those who pretend to explain the cause; some claiming that our soils are worn out, or rather, that the food of the wheat plant has been extracted from the soil, and that this must be returned. But how?

A writer in the February number of the FARMER tell us, "that crop after crop is taken off, until the ingredients, or substances composing wheat, such as hydrogen, oxygen, potash, silica, &c., are entirely exhausted, and nothing is done to replenish them." But how to restore these ingredients, he forgot to tell us. Then after giving his mode of culture, says, "no winter wheat can be raised, let the soil be ever so fertile, except the season turns out extraordinarily favorable, unless the fields are covered with snow to protect it, early in the fall until late in the spring." Had he only told us how to cover our wheat fields with snow, "from early fall till late in spring," there might still be some hopes of raising crops of forty bushels to the acre! Would not a mulch of straw be a partial protection, in case old Boreas should fail to give us the needed blanket? Again,

farmers are frequently charged with carelessness in selecting their seed, or continuing the same variety on the farm for many years, neglecting to change. With many other surmises, reflections, and suggestions, &c.

That wheat does not produce as well as formerly, we all know to our cost, but we have as yet seen no proof of the efficiency of any one of the plans recommended. We do not pretend at this time to review the many theories on the subject, but commenced with the intention of giving the readers of the FARMER, what we conceive to be an experiment in improving our wheat crops, in a new direction. Though we have no permission from the experimenter to publish his letter, yet we think he will not blame us for thus making use of a private letter, on a subject of such great importance to the whole country. These experiments have been conducted by Mr. Charles Arnold, of Canada, who has met with such splendid results in hybridizing, or crossing the grape and raspberry, as is already known to Horticulturists. Mr. Arnold writes:

"I forgot whether I ever mentioned to you, that three years ago, I tried crossing or hybridizing wheat, having often heard our farmers say, 'some of our best varieties of wheat have run out, and no longer produce good crops.' The idea struck me that with plants as well as animals, close interbreeding caused them to degenerate; and having proved by some of my grapes and raspberries that a cross with another variety, caused vigour and productiveness in the offspring, I thought to try it with wheat. The result thus far has been very promising. One single grain in one season produced (4800) four thousand eight hundred grains, on upwards of one hundred stalks. The parents are white souls and red midge proof. Out of one hundred varieties, I have selected fifteen that appear very promising. I have now about an acre of these fifteen varieties sown, but after next harvest the experiment will be quite unmanageable by me, and I fear the farmers in this section will not take hold of it, not having sufficient enterprise.

"Some good judges who have seen my experiment, say it is worth a million of dollars to the country. Some of these varieties last year yielded at the rate of from sixty to eighty bushels to the acre, while old varieties in rows within six inches of them, did not yield at the rate of more than twenty bushels to the acre, under exactly the same cultivation in every respect. Of course the different varieties will have to be tested upon different soils, modes of cultivation, &c., to prove their adaptability, qualities, productiveness, &c.

"But however good it may prove, I fear I shall not be able to secure more than the honour of producing it, and you know that honour alone is a poor, transient thing to live upon.

"I am no advocate for patent rights in these matters, but I think that a person thus experimenting, if they succeed in producing a valuable thing for the country, should be well rewarded for their labor."

J. B. G.



## DOES FARMING PAY IN LANCASTER COUNTY ?

This question is often asked, since Col. J. W. Forney made the contrast between some of the old Southern States, and the county of Lancaster. Land is now selling in this county from \$200 to \$225, and in some instances even above that price, an acre ; whilst in Virginia, and the Carolinas, it can be bought at from \$2.50 to \$20 per acre. One man in this county, raised 13000 pounds of tobacco on six acres, in one season, while another raised 5.000 bushels of corn on sixty-eight acres. Still another farmer raised sixty head of hogs on his farm of one hundred and twenty acres, and these are now ready for the market, or were ready, more than six weeks ago. Another one has raised ten head of steers, for which he is offered \$100 a head. Another man has raised twelve head of cows for which he can get from \$75 to \$100 a head. I know a farmer, who lately sold two home-raised Conestoga horses for \$700, one bringing \$450 and the other \$250. These may be exceptional cases, but as they only exhibit the productive powers of a single district, it is safe to infer that every district in the county may be able to furnish a corresponding exhibit, proportioned to its population, and the quality of its soil. Under any circumstances; it must be evident, that even at the present high prices of land, farming in Lancaster county *will pay*. These results are more the effect of good management, than good luck. The man whose motto is "come boys," is more likely to succeed, than he who says, "go boys." All the men above enumerated, conduct their farming operations on the "come boys" principle, so far as I know.

L. S. R.

## Horticultural.

### HOW TO PREPARE LAND FOR AN ORCHARD.

The almost constant failure of the apple crop for some years past, may discourage many persons from setting out new orchards, and it is perhaps owing to this cause, that thriving young orchards are such rare things, and most of the old ones have been used for fuel. One thing is certain ; where there are no apple trees, there we can expect no apples. Who knows how soon there may be a return of the fruitful "old apple years" again? Believing with my friend Musser, that such an atmospheric or climatic change may take place, as to produce an abundance of fruit again, perhaps at no very remote day, therefore, let us not despair, but continue to plant fruit trees

just the same as if there were, or had not been, such things as failures.

Many young orchards have been planted within the last twelve or fifteen years, and then have gone to destruction or decay through the negligence of the owner ; or through injuries inflicted by mice, rabbits, insects, and sometimes by cattle. Or perhaps these orchards may have been planted on the poorest kind of soil, unfavorably located, and without cultivation and care. An apple orchard wants a good rich soil, as well as anything else, with the ground well prepared. A northern slope is preferable ; but any good ground will do well, if it is well prepared. The subject of subsoiling has lately been much discussed by agriculturists and horticulturists ; but it seems to be pretty well established, that subsoiling before the orchard is planted, is more beneficial to fruit trees, than it is to vegetable and cereal crops. Therefore, the ground for a young orchard should be thoroughly subsoiled before it is planted in trees. Use an improved subsoil plow for that purpose. A subsoil plow, however, can be made out of any ordinary plow, by attaching a V shaped shovel to the back end of the plow, in the furrow, fastened to the beam. It can be run down into the soil, in the furrow, to any desired depth, from four to eight inches, loosening the ground and leaving it lay in the furrow. By this plan much labor will be saved. All the holes in which to plant the trees can be dug with a spade or shovel. Plant the Baldwin pippin, and a goodly number of the pound apple, not because the last is the best apple, but because it is a good and safe variety. Plant also freely the York, Imperial, Smith's Cider, Pittsburg pippin, Russet, Maiden's Blush, Water Mellon, and Krauser. Many others might be recommended, but I do not believe much in recommending too many varieties for the same locality, because some particular kinds may do well in one locality and fail in another. Why it is that some apples do better in different soils, is a thing not fully known to us. After a young orchard is planted, it ought to be well taken care of, and well cultivated for six or seven years in succession ; and also well manured. This will insure a thrifty young orchard, and a fair prospect for fruit.

L. S. R.

### FLOWERS.

Many flowering plants are cultivated more surely, and multiplied more rapidly, by cuttings, than by seeds. One of this kind is the *Scarlet sage*, also called "early sage." Some years ago we saw a magnificent "bush" of this sage, in full bloom, at the Pennsylvania State Fair, held at Norris-town, and nothing could exceed the rich-

ness of the deep scarlet of its many flowers, in contrast with the rich green of its foliage. It took the lead of all the flowering plants in the exhibition. It is easily propagated from cuttings, and also from seeds, if they are sown early enough, and the proper attention given them in reference to heat and moisture; indeed without these latter conditions, the seeds will remain a long time in the soil without germinating at all. There is sometimes a tendency in this plant to stretch itself in long branches, which are apt to break off from the main stem by their own weight. We have seen them compacted and strengthened, and also the number of their flowering laterals increased a hundred fold, by shortening in their branches, before they were in bloom, making the plant almost literally a "burning bush."

L. S. R.

## Entomological.

### SOLDIER-BEETLES.

Of equal importance, but far more abundant and common than the *Tiger beetles*, are the insects which constitute the family, which in common language are called "soldier-beetles," but scientifically, *Lampryidae*. This family is composed of the genera *Phengodes*, *Pollaclasis*, *Lucernuta*, *Ellychnia*, *Photinus*, *Pyraclomena*, *Phansis*, *Photuris*, *Lampyrus*, *Luciola*, *Chauliognathus*, *Polemirus*, *Sillis*, *Telephorus*, *Podabrus*, *Matthimus*, *Trypherus*, *Tytthonyx*, and *Rhagonycha*, but perhaps not more than the one-half of these genera are common, or well known to the county of Lancaster. Perhaps the best known and most common species, are those which have received the vulgar names of "fire-bugs," "fire-flies," "lightning-bugs," &c., and which in countless millions illuminate the meadows, lawns, woods, gardens, fields, hills, and roadsides, from the middle of May, until the end of June, or middle of July.

Only a few species, however, are luminous, and although they appear periodically in vast numbers in early summer, yet not many of them remain all the season through, except perhaps *chauliognathus* and a few others, which visit the various species of "Goldenrod," (*Slidago*), when it is in bloom, towards the summer's close. We have noticed these chauliognathan visitors of the Goldenrod from an early period of our boyhood, but somehow then we always, in some manner, confounded them with the fire-bugs of early summer. Some of these insects appear to be, at least at one period of their perfect state, mellificous or pollenaceous in their habits, but in the larvæ state they are generally considered to be carnivorous. In-

deed many of them are positively known to be so, both in their larvæ and their mature states.— Small snails, slugs, grubs, earthworms, aphids, worms eggs, and other similar insect garbage, are devoured by these soldier-beetles in countless millions every season, and as they undergo their transformations in the earth, we cannot tell exactly how much of the year is passed in this scavenging process.

Doctors Walch and Hull, of Illinois, if I am not much mistaken, have detected some species belonging to the genus *Telephorus* destroying the grubs of the *Curculio*, after they had reached the ground.

Of course these genera of soldier-beetles are, by more modern classification, grouped together in different families, but as we can, on this occasion, only allude to them in a general manner, we have left them as they were grouped by the older entomologists, deferring a special notice of them, individually, to future occasions. Most of these insects are oblong in form, and of a blackish or yellowish color, but the elytrons and the external integument of all of them, is of a soft or leathery consistence. In *Ellychnia*, *Photinus*, *Photuris* and others, the head, in repose, is drawn nearly or quite beneath the thorax, which forms a sort of shield, but in most of the others, the head protudes, and the thorax forms a kind of neck. I have seen *Telephorus* and *Podabrus* under circumstances which led me to infer that they were certainly in the act of destroying *Aphids*.— If the cultivator of the soil is capable of bringing in imagination, before him, this vast army of insect friends, and considers that they occur as abundantly throughout our country's vast domain, as they do immediately around his own domicile, he may form some idea of their useful and beneficent mission; and the multitude of evils and annoyances which they prevent. We have before us, at this writing, a printed paragraph to the effect that "last year the damages done to the crops in France, by insects, exceeded \$105,000,000," an amount that would make an "independent fortune" for a thousand of our readers. And yet these constitute the "little things" in the economy of nature, which many people affect to contemn or disregard. It is not our desire or intention to give an undue prominence to this subject, but it may afford a wholesome lesson to proud humanity to know, that under God's permission the elements of man's distress or destruction may be concentrated to that end before he is rightly aware of their presence. It is a consolation, however, to know that the facts of insect life present many redeeming points, and that not the least among them are the economics and habits

of the soldier-beetles, and that of these, a vast deal more should be known, than now seems to be known by the masses of our country's population.

We do not deem it necessary to give a list of the species of these soldier-beetles, which inhabit our county, for their name is almost a legion, as we should perhaps have done, if they were fewer in number; nevertheless, it is of importance that they should be individually known, in order to avoid unnecessary disquietude or alarm. To know that particular species of friendly insects are co-operating with us in the destruction of those that are known to be unfriendly, is an item of knowledge that is by no means to be disregarded. It is true, that they may destroy many species, from which, under ordinary circumstances, no great danger to the productions of human labor might be apprehended, but then a great redundancy of comparatively harmless insects, even the common house-fly, is, to say the least of it, sometimes a great annoyance.

The soldier-beetles, by whatever means they may have received that title, are rather modest in their demeanor, and do not generally visit our houses or annoy their inmates, no matter how numerous they may be. Indeed the most of them remain quiet during the day, and only sally forth when twilight is approaching, and the luminous kinds then appear to have for their object, the beautifying of the "dark shades of night." They may have a special object in this, that is germane to themselves, but their appearance then, engenders pleasing thoughts and associations which we love to indulge in. Those that sip the nectar of flowers, or feast upon their pollenaceous treasures, of course go abroad during the day, and bask in the rays of the summer sun. They have their love seasons too, and it is at these banqueting places where the sexes meet, and live their short life of love. At this inclement season of the year they are all underground in the form perchance of quiescent *purpae*, or gormandizing and unsightly grubs, but in due time will again appear. S. S. R.

## Botany.

### WEEDS.—ST. JOHN'S WORT.

#### DAS JOHANNES KRAUT.—GERMAN.

The generic name of this plant is *Hypericum*, (an ancient name of obscure origin.)

Dr. Gray recognizes 15 species as introduced north of Virginia and naturalized. Louden in his *Encyclopedia of herbs*, describes 63 species

out of the 133 known to Botanists. Some have quite showy flowers, and are cultivated as ornamental herbs or shrubs.

The species heading this article is common, and has some interest in an Agricultural point of view. This foreigner is deemed by Dr. Darlington as a worthless and rather troublesome weed on our farms, and says it ought to be diligently excluded. It is remarkable how time changes public opinion. I can well remember having heard it said, as no doubt most of my readers do, that 40 to 50 years ago, it was the prevailing opinion that cattle, especially *white cows*, and horses with *white feet* and noses, were affected with cutaneous ulcers during the pasture season, and those sores were universally and confidently attributed to the St. John's wort, and was not doubted by men of superior intelligence.

Although this plant it still common and in some fields quite abundant, how does it happen that we do not hear the same charges now? Are there no white cows or horses with white feet and noses? Or has the plant lost its noxious quality? Or did the evil complained of arise from some other cause? I shall not pretend to answer these questions, but state them as a curious fact. Here I may be permitted to refer to another curious fact as regards this plant.

It is recorded by observant persons, that in 1842 this plant throughout Pennsylvania, failed to make its appearance in fields where it had been previously abundant. The succeeding year it was quite rare, but in the course of a few years it became as abundant as ever, more especially in neglected fields.

There must evidently have been some wide spread cause to produce this result. Local causes, whether electric or atmospheric, no doubt often arise that produce either injurious or beneficial results on various kinds of plants as the grape, peach, apple, &c., and the subject is worthy of attention to note the corresponding condition, not of soils only, but the prevailing states of the weather, in which is embraced the electric and atmospheric peculiarities of the season. Considerable light has already been thrown upon the subject, but more rigid observations are demanded before the true solution of the problem can be attained.

But to return to the subject. If the scientific name "*Hypericum*" is obscure, I may be allowed to give the reason why it is called St. John's wort.

The common people of France and Germany held and do hold the herb in high repute, and gather it with great ceremony on St. John's day, and hang it in their windows as a charm against

storms, thunder and evil spirits. This superstitious notion is traced to the fact that it was applied to wounds and hemorrhages as a balsamic by eminent physicians, and a certain quack used it in maniacal and hypochondriacal disorders, under the name of *Fuga Daemonium*.

This name "drive away the devils or evil spirits," in reference to the maniacal or Hypochondriacal subjects supposed to be possessed by evil spirits, or otherwise, is no doubt the source of the notion referred to. But as all plants have their uses, allow me to give you a few facts respecting the St. John's wort, not generally known. The juice expressed from the tops and flowers is perfectly soluble in water, alcohol and vinegar. A solution in the two former affords a blood-red color, in the latter a fine crimson. When combined with other acids, it exhibits a yellow color, which proves that it contains two coloring matters, capable of separate solution in different menstrua. If alum, combined with a certain portion of patash, be used as a mordant, a bright yellow hue is obtained; by increasing the quantity of the mordant the color somewhat inclines to green; and by the addition of a solution of tin in nitro-muriatic acid, according to the proportion used, rose, cherry or crimson hues, all of a fine lustre, will be produced. This juice can be made to assume a concrete form by being exposed in shallow dishes to the moderate heat of an oven. If then it be reduced to powder, it will readily combine by trituration with turpentine. The resin, thus saturated with the juice, can be mixed with olive oil, and forms the oil of St. John's wort—used in Pharmacy—for which I had frequent calls when engaged in the drug business. I may add, when incorporated with linseed oil, and with the addition of a small portion of oil of turpentine, a fine red varnish is produced, which may be advantageously employed for coating articles of furniture made of wood.

J. STAUFFER.

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## Editorial.

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THE "Pennsylvania Fruit Grower's Society," at its annual meeting, held in the city of Harrisburg in February last, resolved to hold its next annual meeting in the city of Lancaster, in February, 1870. This action was had, if not at the request, at least in deference to the members of the Lancaster County Agricultural and Horticultural Society, who were in attendance at that meeting. We therefore hope that the members of our society will show their appreciation of the action of the State Society, and in the meantime

use all necessary efforts in making the meeting a success. The Society intends to make its next meeting "the largest gathering of the kind they have ever held," and we mistake the mettle out of which our Society has been composed, if its members do not give a good account of themselves on that occasion. They have nearly a whole year before them, and unless something unforeseen should transpire, that might damage, or entirely destroy the coming fruit crop, being thus forewarned, they may be sufficiently forearmed to add greatly to the numerical strength of the meeting and the display of fruit. But that is not all, nor the main object of the Society at its meetings. It desires to bring out all the information it possibly can on the subject of fruit growing, and for that purpose it is making an effort "to induce all our best pomologists to meet with its members at that time," and for the benefit of those who may be present. Much as the fruit growers of Lancaster county, and indeed the entire state of Pennsylvania, have been disappointed and discouraged through the failures of the fruit crop here, we believe they should still persevere in their praiseworthy labors, for it is but reasonable to infer that they must ultimately succeed. The causes of failure surely cannot always combine to defeat their purposes.

The experiences of different growers, from different localities, and conducted under different circumstances, may yet result in developing something useful to the great end which the Society has in view. We admonish the members of our local Society, the readers of our journal, and all others interested in the subject of fruit culture, to bear this meeting in remembrance, and give their hearty endorsement and personal attendance; for no matter if they have but a single apple or pear to exhibit, or a single fact to communicate, they will be adding materially to the common stock of pomological knowledge. This is what is most needed; knowledge, positive knowledge of the causes of the decay and failure of the fruit crop. Such knowledge may be valuable, even when there are no available means to circumvent or avoid a failure. It is a maximum among naturalists, that when we know positively *what a thing is not*, we have made one important step towards a solution of *what it is*. The late failures in the fruit crop cannot be accounted for upon the supposition that it is caused by a redundancy of insects, and the absence of insectivorous birds alone; for in the last few years there has been little fruit for these to protect or destroy.—There are also climatic and physiological causes; causes doubtless also growing out of the modes of culture, and the nature of the soil. Whatever

knowledge is promulgated on these subjects, be it ever so little, will be of interest to the community.

This is, however, only the *negative side* of the objects of the Fruit Grower's Society, and we presume of all other kindred associations. The *positive side* is to receive and impart, on an experimental basis, the best mode and manner of improving fruit, fruit trees, and fruit bearing plants in general, supposing that no adverse contingencies existed. The season is fast approaching when everybody will be regarding with interest and anxiety the prospects of the coming fruit crop, and the eyes of the people will also be on the active associations, organized for the encouragement and development of all useful knowledge relating to that important subject. Therefore, the meetings of our local Society in the meantime, and the meeting of the Fruit Grower's Society of Pennsylvania, to be held here next year may work beneficially for the interest of the county, and we therefore hope our Society and the people at large will accord to them a cordial greeting in February, 1870.

#### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Society met in the Orphans' Court Room March 1st, and was called to order by Henry M. Engle, Chairman. Mr. Engle, on taking the Chair, wished to return thanks to the Society for the honor it had done him in electing him as its presiding officer. He desired to see the Society conducted in accordance with parliamentary usage, and he should expect of the members entire harmony and accord in his efforts to maintain due order and decorum in the monthly meetings of the association. He was one of the first who had moved in the effort to, inaugurate the Horticultural Society, and he was glad to see the progress which had already been made since its organization. That he had not been entirely unambitious of the honor which had been conferred upon him in being elected the presiding officer of this Society he would not conceal; but this ambition alone consisted in his conceiving that thereby he might the better be enabled to render more essential service to the community in which he lived. Would the result thus desired and anticipated be attained, he would then have entirely gratified any ambition he might have entertained for the honor which the Society had seen proper to bestow upon him in choosing him for its Chairman during the ensuing year.

The Secretary, A. Harris, by direction of the Chair, read the minutes of the last meeting, which were approved by acquiescence.

The following new members were placed in nomination and duly elected, viz: J. H. Brackbill, of Strasburg; S. J. Groff, Paradise, and A. J. Frueauff, city. The new members were present and signed the Constitution.

S. S. Rathvon drew the attention of the President to his duty of appointing the standing committees under the rules of the Society.

On motion it was directed that the Chair announce the standing committees at the next meeting of the Society.

S. S. Rathvon next proceeded to read an essay upon the economy of birds.

Levi S. Reist next read an essay upon the water streams of Lancaster county and his observations upon winds.

Mr. Reist, upon the conclusion of his essay, took up the subject of Mr. Rathvon's essay, and spoke of the great necessity of a law for the protection of birds in Lancaster county.

Mr. Rathvon remarked the great necessity for the protection of birds and the utility that they are to crops. He feels assured that so soon as the people come to understand the advantages that birds are to fruit, the matter will regulate itself.

H. K. Stoner believed we had sufficient laws to protect the birds, but remarked the farmers had a timidity in preventing fowling upon their grounds for fear of incurring the hatred and revenge of these prowlers. He thinks the Society should take the matter in hand and have all those killing birds made liable to the law.

H. M. Engle coincided with the views advanced by Mr. Rathvon in his essay and his subsequent remarks, and he urged that the community should take the matter in hand and not allow the birds to be killed lawlessly.

Mr. Groff said that he considered the planting of evergreen trees near residences, besides being an ornament, of great advantage in attracting insectivorous birds.

H. M. Engle spoke of the utility of placing small boxes in cherry trees which will attract the wrens, and thus will fight off other fruit-destroying birds.

S. S. Rathvon concurred in the correctness of this remark, and said he had been convinced of this from his own observation. If wrens could be attracted in some way to grape-vines he thinks they would drive off the cat-birds.

Dr. Hiestand desired to be informed of what utility the wrens were, and upon what they feed. He thinks they chiefly feed upon spiders.

P. S. Reist spoke of the advantages extended in the Western States by railroad companies to Agricultural Societies. They meet with the great-



est possible encouragement, and are offered free tickets to attend exhibitions and displays of fruit. In regard to the protection of birds he was satisfied that the depredators intimidated the farmers, and thus they are afraid to hinder their shooting of the birds. Farmers fear that their buildings might be burned if they would incur the ill-will of the prowlers. Not only do they shoot the birds, but they also carry off water-melons, peaches, grapes and such like.

Dr. Hiestand believes fear of farmers to prosecute is the principal reason why fruit is stolen. If farmers would show a determination to enforce the law, he believes the thieving would soon cease.

H. K. Stoner remarked that it is very easy to talk as Dr. Hiestand does, but he felt that farmers run great risk in putting the law in force against these lawless depredators. He believes the matter should be taken up by the Society, by the County Commissioners or by some organized body, so as to have the law put in force against them.

S. S. Rathvon thinks there should be a rigid execution of the law; but he believes there is great excuse for the farmers. They fear no less than incendiarism. Look at the list of crimes upon our public records, and the fact is clear that the crime of arson is the most difficult of detection of all. He feels that the officers of the law should look the matter up and see that offenders be brought to justice.

H. M. Engle agrees with most that has been said upon this subject, and yet he believes it might be remedied by having the people educated up to a higher tone of morality.

Jacob Stauffer believed human nature identical everywhere. He believes with Mr. Engle that the public mind should be reformed upon the point of killing birds, and the matter may be remedied.

H. K. Stoner does not believe education will remedy the lawless destruction of birds, as he thinks human nature is retrograding instead of getting better.

H. M. Engle spoke of the New York nurseries and how they escape the depredations of thieves, and as he thinks this must be the result of education. For himself he might remark that he has never lost much by pilfering, yet this may be owing to precautions which he has taken. He once caught some depredators, and this chiefly ended that kind of business.

Jacob Stauffer next proceeded to read an essay upon weeds, viz: St. John's Wort.

On motion this essay was ordered to be published in the LANCASTER FARMER.

On motion it was ordered that the LANCASTER FARMER in future be printed and ready for distribution not later than the 25th of each month.

H. K. Stoner desired some information in reference to the article in the FARMER, "Look out for Humbugs."

The Secretary read a letter from Josiah Hoopes, President of the Pennsylvania Fruit Grower's Society, in reference to the next meeting of the Society having been fixed for Lancaster, in February, 1870. He also read a letter from the Corresponding Secretary of the Agricultural Society of Villa Ridge, Pulaski county, Illinois.

On motion the correspondence was directed to be received and entered upon the minutes and to be taken up in future.

George W. Schroyer offered the following resolutions:

*Resolved*, That the Secretary be authorized to have the law in relation to the destruction of birds printed in hand-bills for distribution among the members of the Society.

*Resolved*, That the Society offer a reward of \_\_\_\_\_ dollars in addition to the penalty imposed by law for the detection and conviction of every person found guilty of destroying birds.

These resolutions elicited considerable discussion—some favoring and others opposing them.

S. S. Rathvon moved that the whole subject be referred to a committee of three, who shall report the law at the next meeting, and what it may be deemed advisable for the Society to adopt.

Members attending the Society in April are requested to bring with them cuttings, grafts, &c., for distribution among the members.

On motion, Society adjourned until the 1st Monday in April.

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*Robert Fulton, an Historical Novel*, translated from the Danish of John Carsten Hauch, by Paul C. Sinding.

We give space for a brief notice of this work with the above caption, inasmuch as its subject, Robert Fulton, first saw the sun's light in our county, as also on account of its intrinsic merit in a literary aspect, and because the scholar who adapted it to Anglo Saxon vision, is personally known and kindly remembered by us, as likewise by many others in this community. The author of this work, as well as its translator, are both natives of Denmark, the former a writer of world-wide renown, and the latter, one of the most accomplished scholars of the present day, who has selected America as his home, and who some years ago spent several months in Lancaster, whilst engaged in the translation of this book, to which we now direct attention. Prof. Paul C. Sinding, is already favorably known in this city



and county, by his scholarly work, "The History of Scandinavia," and we take great pleasure in being able to endorse another production of this, one of the most erudite and accomplished of Denmark's scholars. A select few in this city have already perused this production of Danish intellect, entitled Robert Fulton, and concur in pronouncing it *au fait*, and a model production in this kind of literature, and those having read it are convinced that persons of taste cannot but peruse it, with the greatest interest and pleasure. This deferential homage of European scholarship to Lancasterio-American ingenuity and intellect, should, if nothing else, induce a perusal of this work on the part of our citizens. This work, a rare one of its kind, must elevate the author as also the translator, in the estimation of all, who can in any way appreciate the beautiful and artistic, in writing and literature. This work is published by Macdonal & Palmer, 744 Broadway, New York.

THE following small fruit catalogues have been sent us :

J. G. Kreider, of Lancaster county, has sent us his catalogue of choice and select vegetable and field seeds, as cultivated by him. Address, J. G. Kreider, Box 103, Lancaster, Pa.

We have also received the descriptive catalogue of fruit and ornamental trees; garden, flower and field seeds; roses, shrubs and greenbush plants, cultivated and for sale by the Ryder Nursery Association, Chambersburg, Pa. By enclosing ten cents to the Secretary of the Association, E. B. Engle, corner Front and King streets, Chambersburg, Pa., a catalogue can be obtained.

*Hovey's Illustrated Catalogue, and Guide to the Vegetable and Flower Garden*, for 1869, has likewise been sent to us. This is a large catalogue containing one hundred and fifty pages, ornamented with the plates of many handsome and late flowers, and is well worth what it costs, twenty-five cents. This catalogue and amateur cultivators guide to the fruit garden, contains full and complete descriptions of more than twenty-five hundred flowers and vegetable seeds, and includes all the choice varieties of American growth and splendid assortments of the German and French selections. Address Hovey & Co., No. 53 North Market street, Boston, Mass.

We have just received Washburn & Co's. *Amateur Cultivator's Guide to the Flower and Kitchen Garden*, containing one hundred and fifty-three pages and handsomely bound. This superb catalogue eclipses all that we have yet seen, and can be had by enclosing fifty cents to Washburn & Co., Seed Merchants, Horticultural Hall, Boston.

*The American Entomologist*.—The March number of this valuable monthly comes to us, as usual, replete with interesting matter, and fully and beautifully illustrated. We notice, also, that it has eight additional pages of reading matter, including, among other things, a facetious article on our large Polyphemus Moth, a valuable and lengthy article on "Wasps and Their Habits," "Do Toads eat Worker Bees," "Answers to Correspondents," Reviews, etc., etc. Published monthly, at \$1 per annum, by R. P. Studley & Co., St. Louis, Mo.

We have been sent an address, which was delivered by John A. Riddle, Esq., before the Bedford Farmers' Club of New Hampshire, February 28th, 1869, and published by the Bedford Club. The subject, "Sterility is void," develops the new system of agriculture of Prof. Ville. This is an excellent essay and treats of quite new theories worthy of investigation. Persons wishing a copy of the address, can obtain one by enclosing twenty-five cents, and addressing Solomon Manning, Secretary of club, Bedford, N. H.

AMONG all the different kinds of composition roofing which have been introduced to the public, and used, during the past fifteen years, we believe there are none equal to that now put on by Dr. Jos. Gibbons. We have made a personal examination of this roof, and believe it to be, as far as our judgment extends, superior to any other we have ever seen, and that it is all that it professes to be, for the particulars of which, we refer the reader to the Dr's. advertisement in our journal.

WE are sorry to be obliged to inform our friends that the February issue of the FARMER is entirely exhausted, owing to so many new subscribers coming in, who desired the back numbers of the FARMER. Subscribers can bear in mind, however, that they will receive twelve numbers of the FARMER from the time they subscribed.

WE are sorry to notice the death of Mrs. Lizzie Engle, the esteemed wife of Mr. Henry M. Engle, the President of the Lancaster County Agricultural and Horticultural Society, and one of the editors of this journal. Mrs. E. died on the 19th ult., at "Our Home," in Dansville, New York, after a somewhat protracted illness, very much regretted by all who had the pleasure of becoming acquainted with her.

WORKING horses, when in the stable, are better without a blanket than with it. When driven hard and left standing out the blanket should be used.

## Miscellaneous.

**DESTRUCTION OF INSECTS.**—Immense numbers of insects might be destroyed in a garden or orchard, by using bottles of sweet liquid systematically. This is quite common in England, where they do not let every fruit enemy run riot, and then sit down and cry about having no crops; but work to get the good fruit they boast of.—*Gardener's Monthly*.

### GAS LIME AS A FERTILIZER AND INSECT PREVENTIVE.

Zurriel Swope, Esq., of this city, informs me that he has been experimenting for the last three years with this substance as a fertilizer of the soil, and as a preventer of insect depredations, but more particular the former. Even in a case where he had nothing but yellow clay, dug out of a new cellar, and used for filling up a hollow place in his garden; with seventeen bushels of the lime, to a space thirty-two feet wide and one hundred and fifty feet long, he produced a luxuriant crop of garden vegetables, consisting of cabbages, red-beets, beans, peas and cucumbers, the first season, and he had also few or no noxious insects to attack them. He also found it exceedingly beneficial to grape vines and peach trees.—In forming a circle of the lime around cabbage and bean plants it has entirely prevented the attacks of the cutworm. For the expulsion of insects, however, it should be applied once or oftener every season, but as a fertilizer its beneficial effects are more apparent the second season than the first.

Lime is used in the manufacture of gas, and after thus used, the refuse is thrown out and is then what is called "gas lime." It may be obtained at the gas works for four or five cents a bushel. This lime has a strong odor similar to coal-tar. The remedy is so simple and cheap, and comes with a sufficient recommendation, I think, to justify the members of this society in making a trial of it. Doubtless if applied at the right time, for instance, during the months of June, July, and August, it would prevent the apple and peach tree borers from depositing their eggs at the bases of those trees. *Carbolic* and *crysitic acids* are both eliminations of coal tar, and doubtless the lime contains a portion of their disinfecting properties. In this connection I would mention that a correspondent in the last number of the *American Entomologist*, states that Mon. Raspail, a learned French chemist, gives a solution of aloes and black pepper as a good substance for the expulsion of insects, especially moths

from cases of drawers or boxes, containing woolsens, furs, or specimens of animals, birds, insects, &c., and no doubt it would also be useful to plants if judiciously applied. S. S. R.

### SEASONABLE PRUNING.

Those of your readers who have pruning yet to be done, should now have it attended to as soon as possible. When the grape vines are pruned late, they should be taken from their fastenings and laid flat upon the ground, to check the flow of sap until the wounds at the cuttings are partially healed;—let them lie, say, three weeks. In pruning the tops of berry bushes late, let them remain in their bending, natural state—which precaution will prevent bleeding; and common sense and experience alike teach us that profuse bleeding is injurious to both animals and vegetables.

Some self-wise people say—"Don't prune in frosty weather." Now the most experienced pruners do all their pruning in frosty weather, when little else can be done. Such is the practice with all the skillful gardeners in European countries.

In pruning trees it should be borne in mind, that the wood dies back of the cut of as much as the diameter of the shoots and branches;—so cutting off close and paring the wound smooth, is very injurious. Knobs should be left as long as the diameter of the pieces cut off, when the branches or stems from which the shoots and branches are cut remain sound and uninjured.

In pruning shrubbery the shoots have often to be thinned out, and suckers cut away from the roots; the ends of the shoots of many species should be cut off more or less as they may need it,—that is such kinds as bear their blooms upon the sides of the shoots—such as Forsythia, Philadelphus, etc.; but many species bear their blooms on top of the shoots, as do lilies;—such top shoots should not be cut.

In pruning gooseberry and currant bushes the shoots are thinned out when they are too numerous, and the points of the shoots cut off one to six inches, as they may need it.

With raspberry and blackberry the old dead shoots are cut down, and a piece is clipped from the tops of living shoots. So, the modes of pruning are various; to suit the nature of different kinds of plants.—*Practical Farmer*.

**GOOD RUSKS.**—Two tea cups of sugar, two-thirds of a cup of butter, two eggs. Beat these well together, add one pint of sweet milk and one of good lively yeast, and flour sufficient to make a soft sponge. Set it where it will be warm. Next morning knead in more flour and let it rise again, then mould into biscuits and when light bake them in a moderate oven.

**FISH CULTURE.**

The Museum of Economic Fish Culture, in London, under the charge of Buckland, the well-known scientific naturalist, is reported to be in a prosperous condition. The hatching troughs are filled with salmon and trout raised from eggs brought from Scotland, Sweden, Switzerland, the Rhine and the United States. The brook trout of America, hitherto unknown in England, is about to be introduced into that country as an exceedingly handsome fish and one that gives good sport with the rod. It is stated that on the walls of the museum will be found casts to show the enormous masses of roe deposited by a single salmon—a series to show how the egg becomes developed into a fish worth \$10 or \$15, or often more, as well as drawings, painted to the life, of nearly all the celebrated fish which have come to the London market for the last three or four years. Among the monster salmon are found a Tay fish, weighing 49½ pounds; salmon from the Wye, 51½ pounds and 44 pounds; from the Rhine, 51½ pounds; from the Tay, 53 pounds. The illustrations of the details of oyster culture are very interesting. In the cases are found specimens showing the growth of the oyster from its “living dust” state till it is fit for market at from two to three years old. In order to show the best kind of “culch” to be laid on oyster beds, is exhibited a large series of materials chosen there as a resting place by the young oysters themselves when in a wild state, from which the oyster culturist may draw his own conclusions.

**MANAGEMENT OF FARM MANURE.**

The composition of farm-yard manure is exceedingly complex, and varies to a degree seldom fully appreciated. The mode of farming, the class of stock kept on the land, their supplies of food, and the careful preservation of the manure, each and all give to the composition of this manure a marvellous variety. This influence becomes the more striking when we remember that a ton of good farm-yard manure contains only about half a hundred-weight of pure fertilizing ingredients. It is true that the farmer is dealing with a ton of manure, but any injury or loss of quality strikes at the value of the half hundred-weight of fertilizing matter, which is the vital constituent of the manure, and that by which its value is practically determined. The value of this half hundred-weight of fertilizing is worth more than the price we usually assign even to good manure, and the materials could not be purchased at the same cost. The lesson which this fact is calculated to teach us is not to undervalue the farm-yard manure because it is a bulky representative of so

small a quantity of fertilizing matter, but to guard it more jealously, and to improve it more carefully since its valuable constituents are so easily decreased.

There are various ways by which the vitality of such manure may be removed; but the improved management of late years has done much to reduce these losses. The two most productive sources of loss are the injudicious rotting down of the dung-heap and the waste of the liquid running from the heap. Each of these losses may be readily controlled; the latter, of course, is evident, and may be readily avoided, but the former demands special care and attention. In some districts, very great care is bestowed upon making the dung-heap and its general management.

A bottom of road scrapings, or similar waste, forms the first layer, and upon this the manure is heaped and pressed down by the carts going over the heap, and finally it is thrown into shape, some earth put against the sides for a certain depth, and a further quantity sprinkled on the top. A heap thus constructed, if it can be kept sufficiently moist to regulate the fermentation, and yet not so moist as to cause drainage, is in a good condition for the rotting of the manure as it well can be in a heap.

**CENSUS AND AGRICULTURE.**

The Commissioner of Agriculture has addressed a long communication to General Garfield, chairman of the Census Committee, indicating the facts that ought to be collected in the interest of the farmers. It states that neither the average of timber nor of various crops has ever been obtained. It suggests the importance of having separate statistics of winter and spring wheat, and also that the average of corn, root crops, field peas and winter rye should be entered by themselves. The loss by disease of farm animals has been estimated by the Department to approximate fifty millions of dollars per year, and the propriety of gathering information on that subject is mentioned. He also thinks it desirable to collect figures showing the ravages of insects upon the fruit, grain and cotton crops. The average of orchards and vineyards is also asked for; also, information regarding new crops lately introduced in the South.

**TO COOK SPARE-RIB.**—Take a whole side of fresh spare-rib, break the bones so as to be able to carve them nicely, fold them together with the bones inward, then with a strong thread sew the edge firmly, leaving a space at one end to put in the filling, which should be prepared as if for fowls; after filling them finish the sewing, sprinkle a little salt and pepper over it, and roast one hour. Do not put much water in the pan.

## PRESERVATION OF FRUIT TREES.

We find the following in the *N. E. Homestead*, which it says is taken from a discussion of the Farmers' Club at the Vermont State Fair. It has reference only to the small State of Vermont, but how true it is of all the eastern and middle States:

Mr. J. R. Walker showed how early settlers perforce were enemies of trees, and how their descendants have inherited their habits, till in a century our forests have all been swept away. There is abundance of evidence to show that the presence of forests increases the rainfall. Geo. F. Marsh, in "Man and Nature," adduces some startling examples of the evil effects of cutting off the forests in this respect. Nowhere is building material so cheap as it has been in the United States, because of her magnificent pine forests; but now lumber comes 2000 miles to market. As to the amount of firewood required it is estimated that the mills, schools, &c., use 859,860 cords, besides 1,000,000 cords for railroads, and thousands of cords for other purposes, amounting in all to a million cords a year. In lumber it is estimated that the mills of the State turn out 115 million feet a year. The railroad consumption is estimated at \$550,000 for fuel besides ties, &c. Thirty thousand acres of heavy timbered land will be required to furnish all this wood, and fifty-four years will exhaust all we have in the State.

Every man is interested in the wood question, in one way or other. As means for the preservation and perpetuation of our forests, animals should be carefully kept out of all wood-lots; for cutting, full-grown trees and decaying ones should be selected, or where thinning is needed, care and judgment should be used.

The replanting of forests can be made by seed and requires little skill; and the strong motive of self-interest must be brought to bear to secure it. Let us protect our forests, cover over our now jagged hills, beautify our streets and homes, and then shall we have done something not only for ourselves but for generations to follow.

**POOR LAND—POOR FARMERS.**—Mr. Lawe used to say that in England the best farmers were found on the poorest land, and the poorest farmers on the best land. Thus Norfolk has the poorest land and the worst climate in England, while nowhere in the world can be found larger crops, cleaner land, or more intelligent, wealthy and enterprising farmers. Devonshire has the best climate and the best soil in England, and, with some exceptions, the poorest farmers. Hitherto this rule did not prove good with us. We have the best farmers on the best and richest land. It will not always be so. We are mistaken if New England will not produce some of the most enterprising, intelligent and successful farmers on the continent.—*American Agriculturist*.

Those having the care of sheep should avoid any sudden change of food, for either sheep or lambs.

## ENGLISH SPARROWS, AGAIN.

We notice a paragraph in the *New York Sun* informing us that several private individuals have placed in Union Square, bird-houses for the accommodation of the English sparrows abounding there. These boxes are of large size, painted in glaring colors, and made very picturesquely, in order, of course, to attract these pets. Now we very well know that in severe weather sparrows and other winter-birds will seek shelter anywhere, even in a dwelling-house, sometimes, and these sparrows may be thus driven into the houses in Union Square, but that, as the article in question tells us, they will propagate their species by resorting to these boxes and taking possession of ready-made nests, is contrary to the nature of these birds, and will no more do so than will a bluebird, a wren or a martin make its nest on a tree. These metropolitan bird-fanciers are entirely too smart for nature, which they set aside as coolly as if they had entire control.

## FUSIL OIL.

Fusil oil, of which so much is said in connection with liquor adulterations, is a liquor colorless when pure, of offensive smell and burning taste, obtained by continuing in fermentation in the distilling process after the alcoholic portion is drawn off. Its action upon the animal system is that of a positive poison, its vapor producing nausea, headache and giddiness. Its presence in liquors is highly injurious, and indicates bad distillation, or the use of damaged grain. It may be detected by agitating the liquor with water and leaving it stand for the oil to rise to the surface. One ounce of fusil oil kills a rabbit in four minutes.—*Columbia Spy*.

**DESTROYING STUMPS.**—The *Baltimore Leader* suggests the following method for getting rid of stumps without making a large hole in the ground:

"We have heard of two methods of getting rid of stumps, which, as they appear feasible and inexpensive, we hope some reader will try and report upon. Bore with a two-inch auger to the heart of the stump; fill the cavity thus made with sulphuric acid, or with crude oil of petroleum. In the first case, the acid becomes the destructive agent within a few months; in the latter, when the stump becomes saturated with the oil it is fired, and will then burn out to the last particle, like a candle."

**ORCHARDS** should be cultivated as corn fields. Laying down in grass is injurious to trees. Hoed crops may be raised between the rows of trees without damaging the trees.

# World Mutual Life Insurance Company

NO. 160 BROADWAY, NEW YORK.

**J. F. FRUEAUFF, General Agent,**

No. 5 North Queen Street, Lancaster, Pa.

**LOCAL AGENTS:**

- A. B. REIDENBACH, Litiz, Lancaster County, Pa.
- SAMUEL L. YETTER, Elizabethtown, Lancaster County, Pa.
- J. M. GRAYBILL, Columbia, Lancaster County, Pa.

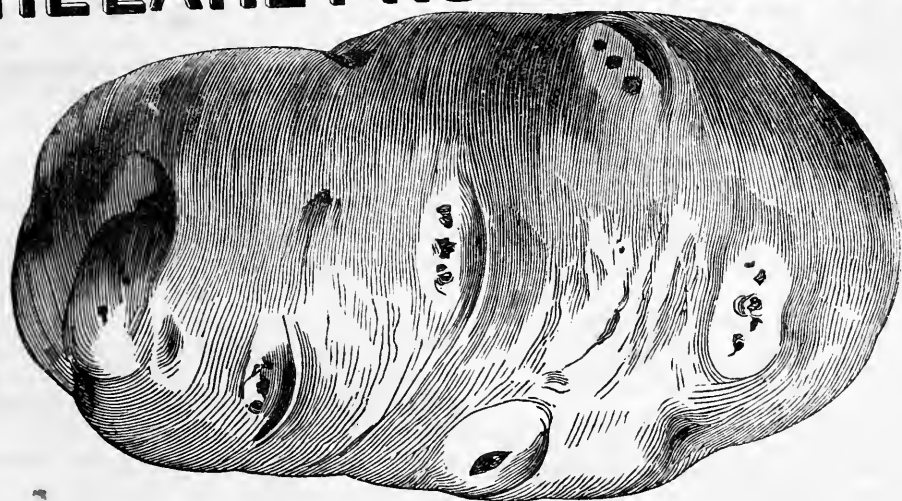
**LANCASTER REFERENCES:**

- COB BAUSMAN, President Farmers' National Bank.
- CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank.
- Messrs. BAIR & SHENK, Bankers.
- Judge A. L. HAYES.
- Col. WM. L. BEAR, Prothonotary.
- Maj. JAS. E. RICKSECKER, City Treasurer.
- N. ELLMAKER, Esq., Attorney.
- B. F. BAER, Esq., Attorney.
- J. F. LONG & SON, Druggists.

No farmer is justified in exposing his creditors, his wife, or his children, to the loss certain to occur to them upon his death, without a Life Insurance Policy for their benefit, and in no Company can this be done with more safety and under better management than in the above. See one of their Agents and have him explain all about it.

## THE EARLY ROSE POTATO.

**THE EARLIEST  
And Best.**



**A DECIDED  
SUCCESS.**

We are prepared to fill orders for Spring at the following prices, cash to accompany the order:

- One Pound, \$1.00, Three Pounds, \$2.00 by Mail Postpaid.
- One Peck, \$5.00, Half Bushel, \$8.00 Delivered to Express.
- One Bushel, \$15.00, One Barrel \$40.00 " " "

(60 pounds to the bushel, 165 pounds to the barrel.)

The following varieties can be supplied in large or small quantities:

- Early Goodrich, per bushel, \$1.50, per barrel, 165 lbs. \$4.00.
- Mich. White Sprout, Early, " 1.50, " " " 4.00.
- Harrison, " 1.50, " " " 4.00.

Address **ENGLE & BRO.,**  
Marietta Nurseries, Marietta, Pa.

Send for a Circular.

**NURSERY STOCK.**

PEACH TREES and GRAPE VINES. Very strong, one and two year old Concords by the thousand. Raspberry and Blackberry Stocks, Strawberry Plants, Osage Hedge, Asparagus and Rhubarb Roots.

**POTATOES FOR SEED.**

Popular varieties, leading among which is **THE EARLY ROSE**, grown from seed obtained from D. S. Heffron, and warranted pure. Quality best, very productive, and one of the earliest. For sale by the pound, peck, and bushel. Send for circular.

**H. M. ENGLE, Marietta, Penn.**



NO. 160 BROADWAY, NEW YORK.

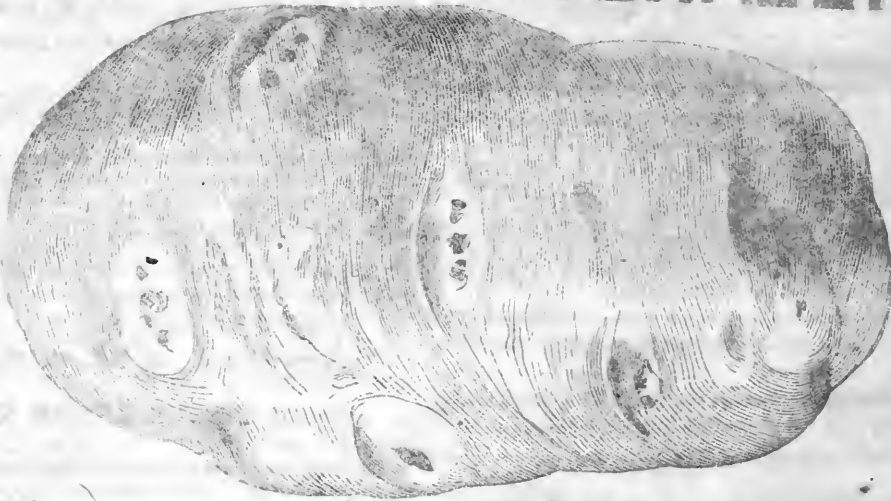
**J. F. TRUBAULT, General Agent,**  
 No. 5 North Queen Street, Lancaster, Pa.  
**LOCAL AGENTS:**

**A. R. REIDENBACH, Dist. Lancaster County, Pa.**  
**SAMUEL L. YETTER, Elizabethtown, Lancaster County, Pa.**  
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MR. JAS. E. NICKESCHER, Dist. Lancaster Co. Pa.  
 A. ELLIOTT, Esq., Attorney.  
 R. E. BAER, Esq., Attorney.  
 J. F. MOZG & SON, Dist. Lancaster Co. Pa.  
 Wm. L. REAR, Professor.  
 No farmer is justified in exposing his creditors, his wife, or his children, to the loss of a certain to them upon his death, without a life insurance policy for their benefit, and in no company can this be done with more safety and under better management than in the above. See one of their agents and have him explain all about it.

**THE EARLY ROSE POTATO.**



**DECIDED**

**THE EARLY ROSE**

The following varieties can be supplied in large or small quantities:  
 (50 pounds to the bushel, 165 pounds to the barrel.)  
 One Bushel, \$12.00. One Barrel \$40.00  
 One Peck, \$5.00. Half Bushel, \$20.00 delivered to Express.  
 One Pound, \$1.00. Three Pounds, \$3.00 by Mail Postpaid.  
 We are prepared to fill orders for Spring at the following prices, cash to accompany the order:

Harrison,	per bushel, \$1.50,	per barrel, 165 lbs.	\$4.00.
Mich. White Sprout, Early,	" "	" "	" "
Early Goodrich,	per bushel, \$1.50,	per barrel, 165 lbs.	\$4.00.

Address **ENGLE & BRO.**  
 Market Nurseries, Lancaster, Pa.

**NURSERY STOCK.**

**BENCH TREES and GRAPE VINES.** Very strong, one and two year old Concord, for the Standard.  
**Raspberry and Blackberry Stocks, Strawberry Plants, Orange Hedge, Apricot and Plum Hedge.**

**POTATOES FOR SEED.**

Popular varieties, leading among which is **THE EARLY ROSE**, grown from seed obtained from D. S. Jefferson, and warranted pure. Quality best, very productive, and one of the earliest. For sale by the pound, peck, and barrel. Seed for circular.

**H. M. ENGLE, Market Nurseries, Lancaster, Pa.**

Send for a Circular.



**A. B. KAUFMAN'S  
INSURANCE AGENCY,  
No. 1 EAST ORANGE ST.,  
LANCASTER CITY, PA.,**

Issues Life, and also, Policies against Fire and all other Accidents.

AGENT FOR THE OLD  
**CONN. MUTUAL LIFE INSURANCE COMPANY,**  
The Best Company in the World.  
CAPITAL, - - - \$23,000,000.

**SAMUEL HESS,**  
South Side Conestoga, opposite  
Graeff's Landing,  
DEALER IN  
**BUILDING LUMBER,  
COAL,**

Wood, Salt, Sand, Plaster, and all the best Fertilizers in the Market. Posts, Rails, Pales, and Fencing Materials of every Description.  
Particular attention paid to Re-sawing Lumber for Cabinet work and Coachmaking.  
☞ All Orders left at the Lancaster Post Office promptly attended to.

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Merchant Tailoring, General Clothing  
AND GENTLEMEN'S FURNISHING STORE,  
(KRAMP'S OLD STAND),  
Corner North Queen & Orange Sts.,  
Lancaster, Pa.,**

All kinds of Men's and Boys' Ready-Made Clothing and Furnishing Goods constantly on hand. Also, a superior assortment of French, English, German and American Cloths, Cassimeres and Vestings which will be made to order in any desired style, with the least possible delay; warranted to give satisfaction, and at reasonable charges.  
S. S. RATHVON.

**CRUCER & RICE,  
DRUGGISTS & APOTHECARIES,  
No. 13 WEST KING STREET,  
NEXT DOOR TO STEINMAN'S HARDWARE STORE,  
Lancaster, Pa.,**

Have always on hand Pure, Reliable Drugs and Medicines, Chemicals, Spices, Perfumery and Toilet Articles. All Flavoring Extracts of their own Manufacture, and of unsurpassed quality.  
Sole Agents for HASSON'S COMPOUND SYRUP OF TAR, the best Cough Medicine in the market. We have also off hand in season an assortment of Landreth's Warranted Garden Seeds.  
The public can rely upon ALWAYS GETTING WHAT THEY ASK FOR AND NO SUBSTITUTES.

**LANCASTER CITY AND COUNTY  
FIRE INSURANCE COMPANY,  
OF LANCASTER, PA.**

CAPITAL, - - - \$200,000.

DIRECTORS:  
HON. THOS. E. FRANKLIN, Pres't, GEO. K. REED, Treas., EDW. BROWN, Sec'y.  
John L. Atlee, M. D., B. F. Shenk, Jacob Bousman,  
Henry Carpenter, M. D., F. Shroder, Jacob M. Frantz,  
Hon. A. E. Roberts, John C. Hager.  
Houses, Barns, Stores, Mills and Buildings of all kinds, with their contents, Insured on Favorable terms.  
W. J. KAFROTH, Agent.  
Residence: 36 South Duke St., Lancaster.

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DEALER IN  
**Pianos, Organs, and Melodeons,  
AND MUSICAL INSTRUMENTS GENERALLY,**  
A large assortment of Violins, Flutes, Guitars, Banjos, Tamborines, Accordeons, Fifes, Harmonicas, and Musical Merchandise always on hand.

**SHEET MUSIC:** A large stock on hand and constantly receiving all the latest publications as soon as issued.  
**MUSIC BY MAIL:** I would inform persons wishing Music, that Music and Musical Books will be sent by mail free of postage when the marked price is remitted.  
**DECALCOMANIA,** or the art of Transferring Pictures. Can be transferred on any object. I would call especial attention of Coachmakers to my stock of Decalcomania.

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No. 15 NORTH QUEEN ST.,**

Be glad to call the attention of persons in want of a good and reliable Time Keeper to their full assortment of

**AMERICAN AND SWISS WATCHES,  
In Gold and Silver Cases which will be sold at prices which will defy competition. Also, a full assortment of  
CLOCKS,**

of all kinds, which we will warrant good and correct time-keepers.

**JEWELRY**  
in great variety, such as Pins, Setts, Ear Rings, Finger Rings, Sleeve Buttons, Chains, &c.

**SOLID SILVER WARE,**  
Manufactured expressly for our sales and warranted coin  
**PLATED WARE,**  
From the best factories and warranted the finest quality.

**Gold, Silver and Steel Spectacles. Hair Jewelry  
Made to Order.**  
Repairing Promptly Attended to.  
ZAHM & JACKSON.

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**SURGEON DENTIST,**

*Office and Residence,*

HOWELL'S BUILDING, No. 65½ NORTH QUEEN ST.,

Half a square south of the R. R. Depot.

Twenty Years' Successful Practice in Lancaster.

The Latest improvements in INSTRUMENTS and TEETH and the very best material, Warranted in all operations.

TEETH EXTRACTED WITHOUT PAIN with the use of *Nitrous Oxide Gas, Ether,* or the *Ether Spray*

TERMS, as low as any in the city, when *low priced material and low priced work* are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

S. WELCHENS. D. D. S.

**CARD!**  
**REIGART'S OLD WINE STORE,**

ESTABLISHED IN 1785,

No. 36 EAST KING ST., LANCASTER, PENNA.

The reputation of REIGART'S OLD WINES AND BRANDIES for purity and excellent quality having been fully established for nearly a century, we regret that the conduct of some unprincipled dealers, who re-fill with and sell from our labled bottles their deleterious compounds, compels us to adopt the annexed trade mark, which in future, for the protection of ourselves and our customers, will be found on all our old bottled Wines, Brandies, Gins, Whiskies, Bitters, &c.



TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent of the Act of Assembly, approved, 31st day of March, 1860,* any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

H. E. SLAYMAKER, Agt.

**LANCASTER**  
**UNION SPOKE AND AGRICULTURAL WORKS**

Corner of Water and Lemon Sts., Formerly Shirk & Royer's Warehouse, on the Penna. Railroad, near Baumgardner's coal yard, and 2 squares west from the Railroad Depot, where we manufacture the

**LATEST IMPROVED GRAIN DRILLS.**

Also, Grain Drills with Guano attached, warranted to give satisfaction. *Rockaway Fans, Cider Mills, Crushers and Graters,* for horse or hand power, which will grind a bushel of apples per minute by horse power, and are warranted to do it well. We would also inform Coachmakers that we have put up in our Shop two of the latest improved *Spoke Machines, or Lathes,* and are fully prepared to furnish the best quality of SPOKES of all kinds, sizes, dry or part dry, and warranted to be a good article. We buy none but the best. 1Spokes, and have now on hand 100,000 SPOKES. BENT FELLOWS of all sizes; SHAFTS and CARRIAGE POLES, BOWS, &c., of seasonable stuff, constantly on hand.

As Mr. Keeler has been in this business 16 or 18 years, and having served an apprenticeship at Coachmaking, he knows what the trade want in that line. All kinds of Bent Stuff for sale, or made to order—and Spokes of all sizes turned for persons having them on hand in the rough.

NOTICE TO FARMERS AND MECHANICS.—Planing and Sawing done at the shortest notice. We have one of the best and latest Improved Surface Planes for operation.

KEELER & SHEAFFER, Lancaster Pa.

LANCASTER, June 25th, 1868.  
 EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business.  
 H. B. PARRY.

**W. M. WHITESIDE,**  
**DENTIST,**

Office and Residence,

EAST KING STREET,

Next door to the Court House, over Fabnestock's Dry Goods Store,

LANCASTER, PENNA.

*Teeth Extracted without pain by the use of (Nitrous Oxide) Gas.*

**BOOKS AND STATIONERY.**

A Full assortment of

SCHOOL, MISCELLANEOUS AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

**STATIONERY,**

WHICH WILL BE SOLD AT

**GREATLY REDUCED PRICES,**

On account of removal April 1st, 1869, to

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Four Doors above Orange Street,

Subscriptions received for all the Agricultural and Horticultural Magazines.

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DEALER IN

**FOREIGN AND AMERICAN WATCHES,**

IN GOLD AND SILVER CASES,

**CLOCKS OF EVERY DESCRIPTION,**

Jewelry in all its Shapes and Forms,

SILVER WARE, designed for Bridal Presents;

BRACKETS, TOILET SETS, VASES, SPECTACLES, GOLD PENS, &c., &c., &c.

# HARDWARE!

**Stoves!**

**Cedarware!**

**Housekeepers' Furnishing Goods!**

The undersigned at their old established stand in

**WEST KING STREET,**

are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

**The Largest and Best Selected Lot of**

**STOVES,**

at Manufacturers' Prices. Also, every other article kept in a first-class Hardware Store.

**A FULL STOCK OF**

**Sadlers', Coachmakers' and Blacksmiths' Tools and Materials.**

**BUILDERS** will find a full supply of every thing suited to their wants at **LOWEST FIGURES.**

**CLOVER, TIMOTHY AND FLAX SEED,**

**BOUGHT AND SOLD.**

**STEINMAN & CO.**

P. E. GRUGER.

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**GRUGER BROTHERS,**

**MARBLE MASONS,**

**14 South Queen St., Lancaster, Pa.,**

Have always on hand or will furnish to order at **SHORT NOTICE,**

**MONUMENTS,**

**TOMBS,**

**GRAVE STONES,**

**&c., &c.**

We pay particular and personal attention both to the **SELECTION OF THE MATERIAL** and the **EXECUTION OF OUR WORK**, and our facilities now are such that we can guarantee our customers the very best work, at the same, and often **Lower Prices**, than are usually paid elsewhere for inferior productions.

**Lettering**

**in**

**English**

**and**

**German,**

**ELEGANTLY AND CORRECTLY DONE.**

We earnestly invite our country friends to give us a **call**

# SHULTZ & BRO.,

Manufacturers, Wholesale and Retail Dealers in

**HATS,**

**Caps and Furs,**

**LADIES' FANCY FURS,**

**HOODS,**

**TRIMMED GLOVES AND MITTS,**

**Gents' Gloves, Capes and Collars,**

**Fancy Robes,**

**BLANKETS, &C.**

**20 North Queen Street,**

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# AMERICAN WATCHES



**H. Z. RHOADS & BRO.,**

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**SILVERWARE,**

**JEWELRY.**

**CLOCKS AND SPECTAGLES.**

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THE UNDERSIGNED REPRESENTS THE

## BROOKLYN LIFE INSURANCE COMPANY,

AND ALSO THE

## NORTH AMERICAN

### Life and Accident Insurance Company.

Both stable and well established companies, the former having a capital of \$1000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

All desirous of securing insurance upon their lives can do so by calling upon the undersigned.

**ALLEN GUTHRIE, Agt.,**

East Lemon Street,

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## REED, M'GRANN & CO.,

**BANKERS.**

LANCASTER, PENN'A.

Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

Sell Bills of Exchange on Europe and Passage Certificates.

Receive Money on Deposit and pay Interest as follows:

1 month, 4 per cent.,      6 months, 5 per cent.  
3    "    4½    "      12    "    5½    "    "

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### German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

**GERMAN VEGETABLE OR UNRIVALLED CONDITION POWDERS**

For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hiddebound, Loss of Appetite, &c.

**PEKSIAN INSECT POWDER.**

A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

**PYROLIGNEOUS ACID.**

A substitute for curing Beef, Pork, Hams, Tongues Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

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Old Chairs Re-painted and Repaired.

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Cabinet Work of every description and a full assortment of Chairs constantly on hand.

☞ All Warranted as Represented. ☛

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PREMIUM

## BRUSH MANUFACTURER,

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### Combs and Fancy Articles,

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## SEED POTATOES.

EARLY GOODRICH,

HARRISON,

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and GARNET CHILI-

By the Peck, Bushel or Barrel. Also,

### THE EARLY ROSE,

which is destined to supersede all of the older varieties for quality, earliness and productiveness, will be sold in quantities to suit purchasers. All the above varieties warranted pure and genuine. Send for circular.

**H. M. ENGLE,**

Marietta, Pa.

Ornamental and evergreen Trees, Flowering Shrubs, Roses, &c., &c., and a complete assortment of everything in the Nursery line, at reasonable rates. For Catalogues, address with Stamps, ENGLE & BRO., Marietta, Pa.

THE

## Lancaster Inquirer

Book, Job and Newspaper

### PRINTING ESTABLISHMENT,

LANCASTER, PA.,

### OFFERS GREATER INDUCEMENTS

### FOR CHEAP WORK,

Executed in the Best Style of Printing,  
than any other office in the State.

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James Street, Lancaster, Pa.,

ARE PREPARED TO DO ALL KINDS OF

## MACHINE WORK,

BUILD LARGE AND SMALL ENGINES,

SHAFTING, PULLEYS, HANGERS, HORSE & WATER-POWERS,

MILL GEARING,

And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

## LARGE ASSORTMENT OF MACHINERY

Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works, in which the best work is turned out.

They also announce that they are now prepared to supply their

## NEW GRAIN SEPARATOR TO ALL CUSTOMERS.

This Machine requires LESS POWER, does MORE WORK, and is considerable CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

Repairing of all kinds promptly done at reasonable rates.

Give us a call, and we will endeavor to please our patrons.

FRANK LANDIS,  
EZRA F. LANDIS,  
JACOB LANDIS.



# Diller & Groff's Hardware Store,

**SIGN OF THE ANVIL,**

No. 8 East King Street, Lancaster City, Penna.

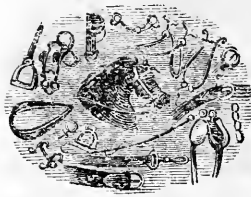
DEALERS IN

Foreign and Domestic Hardware,

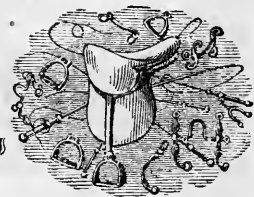
Such as Building Material, Paints, Varnishes, Oils, Glass, Coach Trimmings, Stoves,  
Iron and Steel, &c., &c., &c.

**HOUSE FURNISHING GOODS.**

TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



## AMOS MILEY'S HARNES MANUFACTORY,



No. 37 North Queen St.,

NEXT DOOR TO SHOBER'S HOTEL, LANCASTER, PA.

### SADDLES AND BRIDLES,

PLAIN AND FANCY

### COACH, BUGGY & CART HARNES,

WAGON GEARS, WHIPS, BUFFALO ROBES,

BLANKETS, TRUNKS, VALISES, CARPET BAGS, LADIES' & GENTS' SATCHELS,

Of all kinds constantly kept on hand or made to order. Repairing neatly done.

Also, Agent for **BAKER'S HOOF LINIMENT**, the best article for Sore Hoofs in the country.

## J. M. WESTHAEFFER,

### BOOKS, STATIONERY, FANCY GOODS, &C., &C.,

No. 44, Corner North Queen and Orange Streets,

LANCASTER, PA.

N. B.—Any Book ordered can be sent by Mail to any address,



# TO BUILDERS!



# PLASTIC SLATE!!

## The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.

WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimonials New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built; stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
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# Lancaster Farmer

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No. 5.

## The Lancaster Farmer,

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE ORGANS OF CIRCULATION, OR VEGETATION.

An organ, in physiological language, is regarded as "any portion of a living body capable of performing a complete act, or operation, and this act is styled its function."

The heart, the liver and the lungs of the animal are organs, each performing its functions, and all combined constitute an *apparatus*.

In the animal we have the apparatus of circulation, the apparatus of digestion, the lachrymal apparatus, &c.

Corresponding to these, we have in the vegetable, as organs of circulation, or vegetation, the root, the stem and the leaves of the plant or tree. These form the apparatus of growth.

The difference in the circulating system of the animal and vegetable, consists in the fact that in the animal there are distinct vessels communicating with each other, through which the blood is forced by the action of the heart.

In the vegetable there is no such continuity of vessels, but the fabric being built up of cells, whose walls break up, as it were, all efforts of nature to establish those vascular channels, another system becomes necessary to pro-

mote its circulation and its life, and this consists in "imbibition, or endosmosis." By the *sac* or *cell* imbibing the sap or fluid through its walls, it is carried forward to other cells in turn, for a similar process, and thus the circulation is carried on in the vegetable with the same force and certainty as though it were propelled by the ever active pulsations of an organ as powerful as the heart of the animal.

It is a fixed law of nature that every plant, of whatever character, must have not only the conditions of growth as it meets them in the earth; but *organs*, both in form and size, adequate to the demands of its peculiar nature and ultimate destiny. The root, therefore, is not only necessary to finish it in its general conformation, but is as essential to its life and growth as the stem and leaves. And whilst the latter flourish in the sunlight, and drink in the elements of nutrition from the atmosphere, the root is so formed as to reach into the dark recesses of the earth, there to gather up those principles from the mineral kingdom which are not only necessary to the growth of the plant, but also to a proper development of animal nature.

In order, therefore, more fully to understand this function, we must study the root as a distinct part and organ bearing a physiological relation to the entire growth of all vegetation, and capable at all times to fulfill its part in the general economy of nature.

The root, as all must know, is far different in its appearance and formation to any part of the plant. It fastens it to the earth, and as the main feeder in supplying vegetation with mineral matter to harden the tissues of the higher grades of organic life, it must keep pace with the development of the branch. It grows, therefore, with the stem and branches of the plant, but its manner of growth is of a different character. Whilst the stem elongates throughout its entire length, the root grows only at its extremity. This provision of nature produces an admirable adaptation to the peculiar office it has to perform. It is searching in the dark earth for food to sustain the branch, and if it grew as the stem, "the hard and unyielding earth would turn it into

knotted or contorted shapes, which would be ill adapted for the free transmission of the fluid. But, lengthening only at their extremities, they insinuate themselves with great facility into the crevices or yielding parts of the soil, and afterwards by their expansion in diameter, they enlarge the cavities thus formed in the earth. When this worm-like growth is arrested by inseparable obstacles, their advancing points follow the surface of the opposing body until they reach a softer medium.

"In this manner, too, they readily extend from place to place, as the nourishment in their immediate vicinity is consumed. Hence, also, may be derived a simple explanation of the fact that roots extend most rapidly and widely in the direction of the most favorable soil."

Now, as the branch, or vine, or tree only bears fruit upon what is termed the new wood, the roots are only able to perform their functions of *imbibition* when there is a new and rapid formation of *cellular tissue* in this process of enlargement and growth. To facilitate, therefore, healthy growth of the vegetable, the conditions for the formation of this tissue in the root *must be present*. The soil must be good, and the chemical elements in their various combinations must form the proper stimulants. These new cells are produced near the end of each branch of the root, leaving at the very apex an obtusely conical mass of older cells to bear the brunt of opening cavities in the earth for their growth. As these older cells wear away in this labor, they are replaced by others of a similar kind, joining in right behind them, and hardening too, as the others.

These peculiarities obtain in every form of vegetable life. All plants that feed upon the soil, have roots; and the general laws which govern those roots in their growth and enlargement, apply to each and all of them. There are different kinds of vegetation, however, which have other characteristics peculiar to their respective classes and species, but our space will not allow an exhaustive treatment of them. We will, therefore, confine our researches to what are termed in botanical language, *Phænogamous*, or fruit and flower-bearing plants. In these plants, and vines, and trees, as in all other forms of vegetation, the roots are composed of *cellular tissue*; this tissue becomes dense in the centre as the roots thicken with their growth, and as trees and vines advance in age it condenses into *cellulose* and *lignin*. The outer surface; or *epidermis*, consists of sacs and cells more loosely arranged. A multitude of separate cavities, with closed walls or partitions held together by vital force, consti-

tute this important fabric. These structures hold the liquid until it is absorbed by the denser tissues, when it is carried forward into the body of the plant.

When trees, or vines, or plants, therefore, are over a year in growth, and the roots become dense and hard in the centre, and when the growth of their branches can no longer keep pace with the enlargement of the plant above ground, without a more rapid growth of the root than is natural, another provision of nature presents itself which is most admirably adapted to all its wants. We are speaking now of the function of the root as an *organ of vegetation*. If the plant is to live by proper nourishment from the soil, it does not only require good soil, but it must have an absorbing surface in that soil, sufficient to meet all its requirements. But to have as much of a growth in the root each year as there is in the branch, would make too much root, and throw it out of proportion as well as out of character. To meet this emergency during the period of active vegetation, there are *fibrils*, or *hair-like rootlets* thrown out from the main branches, which are simply elongations of the cells of which the surface of the root is composed. These rootlets form an immense absorbing surface. They do not interfere with the natural growth of the root, but live during the active circulation of the plant, and when vegetation ceases in the fall they die and are destroyed.

In the light of the foregoing facts, therefore, we may see the necessity of exercising the greatest care that no plant be disturbed during those stages of rapid vegetation. Those rootlets are of exceedingly delicate texture, and if ruthlessly torn from the main roots in the act of removal, it would deprive the branch of its normal stimulant; there would not be sufficient of this new absorbing surface to nourish it properly, and it would wither and die, being literally starved to death.

After this period of active growth, when trees and plants have yielded their fruits and flowers, and when waning vitality sinks into a comparative torpor by the congealing action of the frosts of Autumn, and those minute rootlets shall have performed their function and die; or, in early Spring, before vegetation commences, the process of transplantation can be performed without the least injury to the life of the plant.

These peculiarities and provisions of the root, which are characteristic of all manner of vegetation, are no less interesting and important than any part of the physiological structures of the plants which are above ground, and meet the conditions of growth amid the gases of the atmosphere and the warmth and light of the sun.

Every part of the plant, however minute and apparently delicate, has its office to perform, and no function is more difficult, or requires more care and cultivation than the root. A plant may be cut down, or broken and torn to pieces, yet there is recuperative power. But such injury to the root is sure and swift destruction.

The fact that the root is so largely vital in its relations to the plant, is a provision of nature which is not at all surprising when we take into consideration the character of the elements with which it has to deal. The action of the heat of the sun, with the moisture of the ground and the atmosphere, produces chemical changes all over the face of the earth; changes which require the most scientific management and intense heat in the laboratory of the chemist to produce. Mineral substances of the most inert and unyielding character are thus reduced by this slow, quiet chemical action of nature, into the "Protean" and "Azotised" compounds, and other elements which enter freely and essentially into vegetable life. To meet the productions of these powerful re-agents, and to assort the elements and adapt them to the several wants of peculiar and respective plants, is the office and function of the root. And, although its spring of action and that which quickens all vegetation into life, is the *light*, yet its work is in the dark caverns of the earth; its form, growth and habits are all directly opposite to the glory of the structure it is designed to build up and sustain.

S. W.

(TO BE CONTINUED.)

### THE WATER STREAMS OF LANCASTER COUNTY, AND OBSERVATIONS ON RAIN.

The cause of the increase or decrease of water in our streams seems to be a plain question. That a continuous fall of rain in large quantities, for a week together, will start the springs, and increase the volume of our streams; and that the absence of rain, for some weeks in succession, will decrease and depress them, is almost self-evident.

I have for some time thought of bringing this subject before our Society, for it is a very interesting one, and is connected with meteorological observations that may relate, although remotely, to the interests of Agriculture and Horticulture.

There is nothing more essential at the proper seasons than copious showers of rain to insure a good crop of wheat, oats, corn, potatoes, and other species of vegetation; and good water from a pure spring to quench our thirst, and for culinary purposes, is not less essential or desirable.

There seems to be no good reason then why we should not include so interesting a subject in our list of discussions. I, however, feel myself incompetent to do the subject full justice, but I do not feel the less desire to introduce it, in order to bring out some of our more scientific members, who may be better qualified to throw light upon it.

I have often noticed the irregular and unequal distribution of rain showers over the county of Lancaster. While "settled rains" fall more equally over the county, it is far otherwise with "thunder showers."

I have noticed during the summer months less rain falls by thunder showers in Mountville, West Hempfield, East Hempfield, Rapho, Penn, Elizabeth, Clay and the Cocalicos, whilst in Lancaster, the Lampeters, Leacocks and the Earls, I have noticed *more*, and therefore these townships suffer less from want of rain, and their crops of corn are more regular from year to year than in the first named.

To prove my observations I would recommend some member to notice and keep a record of the rain falls in the neighborhood of Sporting Hill, in Rapho township, and another near Enterprise or Intercourse, and report the result to this Society next fall.

Prof. Espy, who studied the phenomena of winds and rains, during the great drouth of 1838, when we had a general failure of corn over the whole country, was of opinion that rains could be brought down from the clouds by a dense smoke. In my opinion the city of Lancaster seems to have been more favored with rains than the neighboring districts, especially those west of it. Is it on account of the smoke, as Prof. Espy supposed, or is it because the city is supposed to be built over a subterranean lake? In my opinion, the reason why the districts east of Lancaster city are more blest with thunder showers than those on the west, is because almost every other farm has running water, and the soil retains more moisture, and for a longer period, and that will afford a greater attraction for thunder showers than is afforded by other districts not so circumstanced.

Many years ago it was the prevailing opinion that the destruction of the forest trees caused a decrease or diminution in the volume of our water courses. The first great drought after the settlement of this country occurred in the year 1752 or 1753, when our country was sparsely settled, very little land under cultivation, and comparatively few of the forest trees had been removed. The country was so dry after harvest that year that the cattle were compelled to sub-



sist upon the field stubbles, and people cut down trees in order that their cattle might find succulent provender in the leaves and twigs thereof. They had at times such very dry weather that some of the larger streams dwindled down to mere rivulets, and the smaller ones dried up entirely, according to traditions and records handed down from that period.

About the year 1825 we also had a severe drought during the summer. Men engaged in blasting rocks would almost invariably set fire to the dry grass and other combustible matter communicated by the ignited wad falling upon the ground. The water courses became very small, and I think it was in that year that the great and beautiful spring at Litiz ceased to discharge water sufficient to run across the road between Litiz and Warwick, a thing that had not occurred since that period. In 1838 we had another very dry summer—so dry that the corn crop was a total failure over the entire county.

We had also dry seasons at intervals since then, and our water courses became exceedingly low at times, and many wells and springs became dry. Engines were brought into requisition to assist the water power on many of our mill streams. Five out of six grist mills on the Litiz creek, and many others on different streams in this county could not run regularly for the want of water. Yet a gradual change has taken place within the last twenty years, and our streams have increased in volume, and are more uniform in their flow than they formerly were. It is seldom that those springs and wells fail now that used to fail. Engines are now more or less dispensed with at our water powers. What has caused this change? Our forests are nearly all cleared away. We have become almost one vast rolling prairie.

And then, as to our modes of cultivating the soil in this county. Many years ago we planted our corn, then we went through the rows once with the spike or tooth-harrow; then it was plowed once, after which a slight touch of the hoe, and the work was finished. The yield was from thirty to fifty bushels to the acre. Now, we cultivate with the hoe-harrow, from four to six times, to the depth of four or six inches, and get from fifty to one hundred bushels to the acre. We have learned that by keeping the soil loose and mellow it will draw the vapors to the ground, where they will penetrate to the roots of vegetation, and in this way increase the yield.

In my opinion, dry weather is more common in new countries, where there is no cultivation, than in old and well cultivated districts. How often do we hear of great droughts in new countries,

whilst old ones were entirely free from them?

It was only a few years ago that they had such a dry spell in Kansas; and it is a very common thing to hear that they have very dry weather in the prairie States, or in densely timbered countries, when our old and highly cultivated districts are comparatively free from them.

I have read quite recently that rains have become more frequent in the Sandwich Islands, since they have planted forest trees. If this be true, I believe that cultivating the soil has brought that change about, and not the planting of trees; as I have fully shown that Lancaster county has suffered less from drought since it became one of the best cultivated districts in our country.

In my opinion, it is cultivation alone that has brought us such copious showers of rain for the past fifteen or twenty years. It has almost constantly occurred in this county that where we were in want of rain a hard and compact soil had not the power to attract the clouds towards the surface of the earth. It is said that when more than the usual quantity of rain falls in one part of the world, there is a corresponding drought in some other part. This was true in 1867, when more rain fell in July and August of that year than usual in some sections of the United States, or than had ever been known before, while at the same time the greatest drought prevailed in Asia, causing one of the severest famines that country ever experienced—caused solely from a want of rain, too.

A small rivulet passes through my farm, which starts about half a mile eastward from my residence. It frequently got dry twenty years ago; when it was surrounded by timber land. Now, however, it is surrounded by cleared and cultivated land, and consequently for more than fifteen years it has not been dry at all. I will here mention a strange phenomenon in regard to this stream—after harvest, or about the middle of July and afterwards, it sometimes ceases to run for several hours, and then commences again. I have noticed the water to disappear and reappear at all hours of the day, whether in sunshine or cloudy weather, and I have often wondered whether the high and low tides could affect water courses so remote from the ocean. I would like to have the opinion of some of the members of the Society on that subject.

L. S. R.

[With regard to the allusion made to Professor Espy's theory of attracting showers towards the earth's surface by means of smoke, was it not also a part of his theory that violent atmospheric concussions had the same, or a similar effect? Such, for instance, as thunder, discharges of artil-



lery, or blowing of rocks? In connection with this latter idea, we distinctly remember at least one occasion—either on the 22d of February or the 4th of July—that a copious shower of rain appeared to be brought down by such concussions. The clouds for several days previously had been dark and lowering, but no rain had fallen. A company of volunteers had turned out to celebrate the day by street firing. Although there seemed to be no more indication of rain falling that day than on any of the three or four preceding days, yet as soon as they commenced firing the rain began to fall, and each succeeding volley seemed to bring down an increased shower of rain, until they were compelled to desist altogether. It was the opinion then of the members and others that the discharges of musketry were the immediate, if not the superinducing cause. As a singular coincidence, we may mention, too, that many of the great battles recorded in history after the invention of gunpowder, were fought during copious showers of rain—especially: the great battle of Waterloo. During the “Great Rebellion” many of the battles were fought in the rain, and some of the people imagined at last that many of the showers in the North were caused by the cannonading in the war South. Immediately after the battle of Gettysburg we had one of the heaviest rains that occurred that whole year. Be that as it may, every one capable of observation must have noticed that immediately after every clap of thunder, during a summer shower, there is an increased fall of rain. And as to the smoke theory, we think we have heard it said that Pittsburg is more favored with rains than any other city in our State. The city of London, in England, is famous for its cloudy and rainy weather. We do not think, however, that any of these contingencies would have much or any effect on a long continued drought, or on any condition of the surrounding atmosphere not saturated with a large quantity of vapour.—EDS.]

### PEAR CULTURE.

*Essay read before the Agricultural and Horticultural Society by P. S. Reist, Esq.*

MR. CHAIRMAN AND FELLOW MEMBERS.—This being the day of the regular meeting of our Agricultural and Horticultural Association, which has for its object the mutual improvement of its members, and the dissemination of different views as to the best methods of growing fruit and vegetables, I have deemed it not inappropriate to submit a few ideas on the subject of pear culture. Not that I am so presumptuous as to assume to instruct the members of this Society, many of whom are far more conversant than my-

self with this subject; but my attempt upon this occasion is prompted rather by my desire to open up a new field of inquiry, and thereby elicit, instead of hoping to impart, information.

The age of man is scarcely adequate for the planter of a pear orchard to expect to gather much of its fruit, as this species of fruit tree is long before it begins to bear its fruit in abundance. The old and venerable pear trees which may be seen standing near many of our city and country residences, have been planted over seventy years ago by our ancestors and forefathers, who have terminated their earthly career for a more happy land. They, in their day, planted the trees from which we, their descendants, gather the fruit; and, therefore is it not incumbent upon us like them to plant, also, for our successors?

There is one feature as regards pear culture to which I specially desire to call the attention of this Society. I will illustrate this by what has come under my own observation. There are now standing on my farm four or five old and nearly worn out pear trees, which have been planted not less than seventy years ago, and which have long borne, and still continue to bear, good fruit, if not every year, at least every alternate year (except when a total failure of fruit occurs). These trees had attained their largest growth, and were in their prime about thirty-five years ago; since which time they have been on the decline, and seemingly growing less year by year; limbs in the meantime dying and dropping off, whilst sickly new ones would for a time supply their place until these again would die, and in turn be blown off. These trees are the sole remnants of many more that were planted about the same time—how many it is now impossible to say.

What to me seems exceedingly strange, and the feature I refer to is no other pear trees could be grown upon the same ground where the first had failed, for a period of thirty-five years, when about the same number succeeded and scarce any since, except some dwarfs and a few standards not yet arrived at bearing. In order to succeed in having the few to live that have grown within the last three or four years, I have been compelled to plant and re-plant every year for eighteen years, all failing except the few already stated. I have observed this in addition that most of the trees alluded to which have succeeded, have been planted either on places where the soil had been filled up, or where the floods had washed considerably, and thereby rendered the soil rich. These points may be worthy of some reflection, and I throw them out for the

consideration of others who may feel sufficient interest to ascertain if my observations be grounded in fact. On these points I have but said what I apprehend might be verified in many other places in this country. I only hope that some of our skilled horticulturists will note these facts as I have stated them, and see if they may in any degree aid in deducing correct principles for the guidance of our fruit growers.

The atmosphere would seem to have as much to do, perhaps, with the growing of pears, as the soil, or how account for the fact that they can only be grown upon the same ground every thirty or thirty-five years? If planted sooner, they are killed off by drouth, cold, blight, or other kindred disease. While I have spoken of a succession of pear trees being able to be raised upon the same ground every thirty or thirty-five years, let it be borne in mind that I have reference to the old family homestead, which has been settled over one hundred and fifty years, and on which many groups of pear trees have been planted seventy and one hundred years ago. As, however, I before remarked, my aim in this feeble attempt at composition has not been so much to impart information, as to endeavor to stimulate some one of our Horticultural friends in this direction, who after giving the matter his attention, may edify this Society with his knowledge and reflection. If these few remarks hastily penned have this result, their object will then be fully attained.

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## Agricultural.

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### HYBRIDIZATION OF WHEAT.

Farmers have been for years puzzled to assign the cause why wheat does not produce as it did in years gone by. We propose to submit a few suggestions as the result of investigation and reflection upon this question, and which may somewhat explain, if well founded, the difficulty to be solved. It is a well-known law of nature that neither among animals nor vegetables shall the distinction of species be obliterated. This becomes clear when it be remembered that the offspring of two animals of different species is rarely endowed with the procreative power, and still more rarely with a long continued succession. The product of two plants of different species is in general more prosperous than the animal hybrid, yet it is forced at length to yield to the law of nature which compels the absorption of species. This law is believed to prevail likewise to a certain extent among varieties which are only modifications of the same species, and the operations of nature tends, as it is believed, even to the

mergement of varieties into their original species. From observation it has been discovered by eminent agriculturists of Europe that the cereals are among the plants the least favorable to cross-fecundation. This, however, has been successfully performed in repeated instances already in Europe and America, and it is now believed that herein is to be found the secret and remedy for unsuccessful wheat culture. Not that the soil has become so depleted of its ingredients as to be incapable of producing good crops of wheat is the reason why farmers are unsuccessful in this branch of husbandry, but because the varieties of wheat are running out and returning to their normal condition. The different kinds of wheat which we now possess are the results of experiments and culture, and some of these now already so nearly relapsed into their normal condition that they have ceased to be profitable. What is now needed is a new kind, the product of hybridization which may be as productive as the wheat crop used to be in former times. This, it is believed, can be easily obtained when our farmers once turn their attention in earnest to this matter and when they come to recognize the fact that innumerable kinds of wheat can be produced by sowing different varieties near each other, and by removing the unexpanded anthers from one plant and applying the pollen of another and subsequently guarding them from the attacks of birds, insects and other disturbing influences. New varieties so produced have been discovered to be much more prolific for a certain period, until they have, in turn, run their course and become exhausted. We believe by farmers turning their attention to this method of producing new kinds will be found the only sure remedy by which abundant crops of wheat are to be produced in the future. The land is as fertile as formerly but the varieties in use have too nearly reached their condition of nature to prove profitable. Let our farmers, therefore, study this question of hybridization and production of new varieties and they will discover, as we suspect, the secret of the failure of the wheat crop and how it may be remedied. An article of the length we designate, is altogether inadequate to do more than call the attention of the farming community to this very important matter in which the interest of all is involved. Fortunes, we apprehend await the successful producers of new kinds of wheat which may take the place of the old varieties now exhausted. By this means the decay can be remedied, and as an old and once valued variety becomes worthless a new one may have been discovered to take its place. This deterioration of varieties is but an exemplification of uni-

versal nature which we see all around us—birth and dissolution of all creation—the old fades, dies and passes away, whilst the young buds forth and takes the place which the former had occupied. It in turn follows, and thus the current of nature is ever changing and assuming a new aspect.

A. H.

## Horticultural.

### TRUFFLES, AND HOW TO GROW THEM.

There is, perhaps, no edible delicacy so little known to our people, generally, as that of truffles, and scarcely one that is higher appreciated in France and Italy. A dish prepared with truffles is one of the triumphs of the culinary art. The perfume of truffles newly exhumed is, to one previously ignorant of their appetizing fragrance, an event of lifelong remembrance. To many persons the very name of truffles is of something unobtainable, the purchase of them a piece of extravagance not to be thought of; and yet they ought to be attainable, certainly as plentiful as mushrooms.

Wherever is thrown the grateful shade of oak, beech, chestnut, birch, and hazel trees, grown, however, on calcareous soil—that is, soil abounding in lime, chalk and flint—or on calcareous clay grounds—that is, calcareous matter mixed with fine quartz sand, lying on a bed of marly clay, which easily splits into thin layers—these truffles may be plentifully found. They disdain all culture. The most careful attention to their cultivation ends in disappointment, unless their own wild habits are consulted and followed. The shade of trees seems to be the first thing needful for their production, provided always that the ground be equal to their needs.

The growing of truffles in France on a regular system of culture has been often tried, but without success, and it is the opinion of those who have made the experiment, that the only means of obtaining a supply is by planting fragments of mature truffles in wooded localities, having a care, however, that the soil be calcareous, or calcareous clay.

The most successful plan known is to sow acorns for oaks over a considerable extent of this kind of land, and when the young oaks have attained the age of ten or twelve years, truffles are found in the spaces between the trees, and this without sowing any morsels of truffles, or spores. Acorns are planted, and truffles come with the oaks—that is, they spring up of them-

selves, probably from the spores lying dormant in the soil.

Truffles were thus obtained from such planted grounds for thirty years, when the plantation ceased to be productive, in consequence of the trees shading the ground too much.

Many of the truffle-ground proprietors in the district of Loudon and Civray, in France, make periodical sowings of acorns, and thus bring in a certain portion of the land as truffle-grounds each year. The trees are thinned to about five or six yards apart, and as soon as their branches meet and shade the ground too much, they are pruned out. In the market at Apt, in France, thirty-five hundred pounds of truffles are exposed for sale every week in their season, which is through December and January. The department of Vaucluse is said to yield upward of sixty thousand pounds weight annually, thus producing a very large revenue.

Four species of truffles are exclusively used in France. In Italy there is one of a very large size, the *tuber magnatum*, which commands a higher price than any other kind, and in the south of Italy and Sicily, in Syria, and in Africa, is another species, the *serpezia leonis*, which is in common use as an article of food.

The truffles are gathered at two periods of the year: in May only a white species is to be found, which never blackens, and has no odor; it is dried and sold for seasoning. The black truffles commence forming in June, enlarging towards the frosty season; then they become hard, and are full of fragrance. They are dug up a month before and a month after Christmas.

Mons. Gasparin, who visited the grounds at Carpentras, and from whose description the information is obtained, says, "There is not the slightest doubt that truffle plots can be formed at will in the centre of France by the acorns of the common or evergreen oaks. A sow is employed to search for the truffles. At the distance of twenty feet she can scent them, and makes rapidly for the foot of the oak, when she digs into the earth with her snout. She would soon root up and eat her treasure, were she not turned aside by a light stroke of a stick on her nose, and given an acorn or a dry chestnut, which is her reward. In an hour was gathered upwards of two pounds of truffles, in a poor part of the field sown with oaks. Mons. Rosseau marked with white paint the foot of the oaks where truffles were found, so as to obtain from them acorns for the new sowing, and also not to sacrifice the trees when he clears the woods." In some parts an artificial snout is fitted on the swine, and they then throw up the truffles, but cannot eat them

The foregoing from the *Chimney Corner* of April, 1869, is extracted from a work on *The Manners and Customs of Different Nations*. In an article on "Edible Fungi," published in our January number, we had occasion to allude to this subject, as a faintly prospective branch of American husbandry, and we cannot see why it should not ultimately become a subject of as much importance as that of fish culture and oyster culture.

"Well, but what are truffles?" asks the inquisitive reader. An authority before us says they are "a kind of mushroom, (*tuber cibarium*) of a fleshy, fungous structure, and of a roundish figure, found buried in the soil of woods; at a depth of several inches, much esteemed as an esculent." The same authority says that the term truffle is from the old French, *truffle*—Norman French, *truffe*—Provincial French, *tartoufle*—Spanish, *trufa*—Italian, *tartufo*, *tubero*—and Latin, *tuber*.

Roundish, spongy, mushroom-flavored tubers have been dug up in oak woods in this county at various times and places, many years ago, and which may still be in existence, which, no doubt, belong to this class of fungous plants, but whether any of them were prepared for the table, "this deponent saith not." We have seen what is commonly called *maueicles*, and ate them too; and these have somewhat the appearance of the illustrations we find of truffles in books, barring the stem.

As the United States possesses all the varieties of climate found in France, Italy and Spain, and perhaps also truffle-producing Africa, we may infer that certain species exist here, or that, under favorable circumstances, may be introduced, and left to grow in their own free way, for, according to the foregoing article, *they will not be cultivated*. Let them then do as they please, only, if possible, introduce and prepare a proper abode for them, for they are good enough without cultivation. When we cannot better the condition or quality of a thing it is best to "take it as it is," and as a wholesome and agreeable addition to our list of edibles, we shall rejoice in the introduction of truffles.

S. S. R.

## Botany.

### WEEDS.—No. 2.

#### DANDELION, OR PISSABED.

I find both these names, with reference to the plant, in Webster's Dictionary. In order to show how common names arise, I will begin with the classical Greek name of this plant, *Leontodon*,

from *lion* and *tooth*, in reference to the peculiar toothed edges of the leaves. The German name is *Loewenzahn*, *Pfaffenrohrlein*, and *Dotterblume*. The French have also two names for it. "Dent de lion," and hence our common name "Dandelion." The other French name is "Piss-en-lit," from its diuretic qualities, and from this our vulgar name "Pissabed," is derived, so that both the common names heading this article are corruptions from the French. In Gray's Botany it is the "*Taraxicum dens-leonis*." The modern name of common Dandelion, which everybody knows, so that I will not waste time to describe this native of Europe, naturalized and common in almost every part of the United States. It flowers from the commencement of the Spring to late in the Autumn, and is often more abundant than welcome in our pasture grounds and meadows. It is a difficult weed to extirpate, because every inch of root will form buds and fibres, and thus constitute a new plant. The seeds, too, formed in the globose heads, with their thin stipe and pappus, forming a parachute by which they are carried about by the winds and planted far and wide. To say nothing of school boys and lovers, who blow upon those heads by way of divination. Howitt says:

Dandelion, with globe of down,  
The school-boy's clock in every town,  
Which the truant puffs amain,  
To conjure lost hours back again."

Darwin also takes notice of this plant in the following verse:

"Leontodons unfold  
On the swart turf their ray-encircled gold;  
With Sol's expanding beam the flowers unclose,  
And rising Hesper lights them to repose."

This plant is also called the rustic oracle by an old writer, who says respecting the globose head of seeds: "Are you separated from the object of your love?—carefully pluck one of those feathery spheres; charge each of the little feathers composing it with a tender thought; turn towards the spot where he loved one dwells; blow, and the little aerial travellers will faithfully convey your secret message to his or her pet. Do you wish to know if that dear one is thinking of you, as you are thinking of him or her, blow again; and if there is left upon the stalk a single aigrette, it is a proof that you are not forgotten." The author adds, "but this second trial must be conducted with great caution. You must blow very gently; for, at any age, even at that which love renders most resplendent, it is wrong to dispel too rudely the illusions which embellish life." I know that even practical farmers can relish a morsel of light reading—and if the older ones can not, the younger portion of our readers, I know, relish a

slight digression that lifts the curtain upon the pleasant whims of by-gone years,—I shall, therefore, offer no apology for introducing the poetry and romance connected with this common weed. I can, however, not do justice to the plant without stating a few other facts, some of which are not generally known. As a salad, blanched like Endive, it is rather bitter to be palatable; in Spring, when quite tender, it answers to compound with other salads—some persons seem to relish it, it being frequently seen on the market. The root dried and ground is a good substitute for the chicory root in making coffee. Swine are fond of it, and goats will eat it, but sheep and cows dislike it, and by horses it is refused.

The medical properties of Dandelion is aperient, diuretic and resolvent, and at one time it was much used, and thought to be endowed with very powerful properties. Dandelion pills are in the market still, and indeed, Park, an old English writer, says, "Whoso is *macilent*, (lean and thin, emaciated) drawing towards a consumption, or ready to fall into a *cachexy*, (a bad state of the body, a depraved state of the solids and fluids.—*Hooper*), by the use hereof for some time together, shall find a wonderful help." Almost all the old authors speak of it in equally favorable terms. Berhaave had a high opinion of its powers, and esteemed it capable, "if duly continued, of resolving obstinate obstructions and coagulations of the Viscera."

But, like many other old remedies, it was for a long time neglected, but is again employed both in Europe and this country to some extent. Its diuretic effects are best promoted in combination with Supertartrate of Potash, (Cream of Tartar.) A decoction made with two ounces of the root, or whole plant, boiled in two pints of water down to one-half, the dose is about a wine glassful. The extract, when properly made, is of a brownish color, and not blackish; bitter and somewhat aromatic, wholly soluble in water. Dose from ten grains to half a drachm.

J. S.

## Entomological.

### SNOUT-BEETLES.

The insects commonly called "Snout-Beetles," and "Weevils," and of late years some of them designated by the almost as common term, "curculios," all belong to the coleopterous Family CURCULIONIDÆ, containing about one hundred Genera, and species too numerous to mention in this paper. We have about seventy-five of these

species here in the county of Lancaster, but the best known and most dreaded, is the *Conotrachelus nemphar* of naturalists, but commonly called the "*curculio*." All of these insects, or nearly all of them, were originally included by Linnæus and others, in the Genus *curculio*, but it is doubtful now, whether we have a single species in this country that properly belongs to it. The *larvæ* of the curculios live in, and feed upon, various vegetable substances, such for instance, as fruits, nuts, seeds, leaves, grain, rotten wood, woody and other excrescences, &c., &c.; and the *mature* insects of some of the species, are sometimes found on flowering plants, on fruits, in nuts and seeds, and also in decayed wood. There are not many of them that come in conflict with the products of human industry, and culture, but these have baffled the utmost skill of man to circumvent or destroy, for many years, and at this moment, the horticulturist stands appalled at the inroads they have made upon his domain, without a certain remedy for their convenient extermination. Excepting those that feed in nuts, seeds, and grain, there is mainly but one species from which the fruit grower is apprehensive of danger, and this one, by way of distinction, he calls the *curculio*, just as if there was but one species of that general name, when in fact, there are thousands of them. This makes it absolutely necessary to pay some regard to scientific names, however objectionable they may be, and without which their whole history, in a great measure, would become confounded and confused. These insects are termed "Snout-beetles," in common entomological language, because a leading and distinguishing characteristic of the larger number of the species, is a prolongation of the front part of the head into a "snout," or *rostrum*, as it is technically called, with a pair of short, stout, sharp *mandibles*, or jaws, at the end of it, and with which they are capable of penetrating very hard or tough substances, into which they deposit their eggs. The length of the snout or *rostrum*, is more or less connected with the habits of the species, for instance, the genus *Balanius* has it very long, and therefore, these are found puncturing chestnuts and depositing their eggs therein, while the nuts are still in the burr and on the trees. It is astonishing with what consummate patience and skill the female *balanius* will drop her egg, and then pick it up with her jaws, and with her long bristle-like snout, reach in and place it in the puncture she has made near the base of the nut.

Nearly all, or perhaps quite all, of the snout-beetles, either hibernate in the perfect state, or remain in the *pupa* state, during the winter



season; for I have found most of the species I have in my collection, during the fall and spring months, hidden under stones, or under the bark of trees, and many other similar hiding-places. I have also taken them during the summer months on the wing; therefore, any device to prevent them from crawling up the trunks of trees, is labor in vain; for they are all rather poor pedestrians, and in their locomotion depend more on their wings than their feet. Some of them are found abroad and active very early in the spring, as early at least as the blooming season of fruit trees, and perhaps at this season they feed upon the nectar and the pollen of flowers, as I have often found the smaller species, later in the season, with their snouts buried in the small flower cups, with nothing but the hinder parts of their bodies exposed. Our largest species, the *Ithycerus curculionides*, of naturalists, may often be found in early spring feeding upon the unexpanded leaf buds of apple trees, and in some parts of the country they are very numerous and very destructive. I have found the black "wheat-weevil," *Sitophilus granarius*, and also a brown species, or a variety of it, in the ears of wheat while it was yet uncut, and standing in the fields, about the time the grain begins to harden; and I have thought that *that* is the time and place when the females deposit their eggs in it; the insects afterwards maturing, or coming to perfection, when it is in the stack or in the barn-mow.

Of the "fruit-weevils," or curculios, (*Constrachus nemophar*.) that survive the winter, most likely the larger number of them are impregnated females; and, if closely watched, they would perhaps be found on the trees when they are in bloom. If there are any birds that destroy them at this season, they would likely be the orioles, or golden robins, the willow urens, and the various species of warblers, which are often seen on fruit trees at this period, very busily engaged from morning until night, feeding upon such insects as visit the trees in their blooming season, when the birds are not frightened off by human agencies.

Presuming that the reader of our journal must, by this time, be very familiar with the form and general appearance of the popular *curculio*, I deem it unnecessary to give a special description of it here, suffice to say, that it is about a quarter of an inch in length, of a brownish gray in color, externally roughened, with a pair of warty elevations and two whitish blotches on the back, near the middle of the wing-covers. From some cause or other, some individuals of the same species and same brood, are much darker in color than others. It would be impossible to state correctly

on what particular day of the month they first make their appearance in the spring, for this is more or less influenced by the temperature of the weather, but of this we may be quite certain, that from the time plums, peaches, apples, apricots, nectarines and pears are as large as a green cherry, almost until they ripen, you will find more or less of these insects about. Indeed, I have known the *larvæ* to have matured and gone into the ground as early as the 10th of June. On one occasion I gathered fifty plums which had fallen from the tree the previous night, out of which 10 of the *larvæ* had already gone into the ground; in half a dozen instances they were dead, and in the remainder the *larvæ* seemed to be still feeding. A very singular coincidence was, that in three-fourths of these plums, and in which the seed had not hardened, I found the *larvæ* in the kernel, and only in about one-fourth, where the seed had already too much hardened, did I find them in the pulp around the seed. I also, on one occasion, observed the same thing and in about the same proportion in young peaches. This would seem to imply an instructive partiality for the seeds, or rather the kernel of the seeds, of fruit, or else that not sufficient pulp had yet formed around the seed for the *larvæ* to feed upon. Many nuts and seeds are infested by different species of *curculio*, even the seeds of the grape, during the last two years in Canada, Ohio and other places, have been infested by these insects. It may be, therefore, that their seed eating propensities in general, lead them to prefer the seeds in stone fruit, and the reason that they are not always found there may be because they harden too soon for them to penetrate them. I have often found the kernel of apple and pear seeds eaten out by them, and also the seeds of the plum and peach eaten half through, or scored on the outside, as though they had been making an effort to get through, and I have also observed the same in cherries. I have also observed that where the seeds in stone fruit are infested, a greater proportion of them fall to the ground, and also much earlier than when they are only in the outer pulp. The damages to the peach crop in former years, with us, has been but trifling, compared with that done to plums, but in some of the Western States it has been great, and we cannot tell what it would be now in our locality if peaches were as abundant as they once were. Although it may be needless to say that the *curculios* positively do not *cause* the excrescences, or knots on plum and cherry trees, yet when those knots are still soft and fleshy, they do sometimes deposit their eggs in them, and these eggs also incubate and the *larvæ* feed upon them. Indeed,



if fruit was to entirely fail, and continue to fail for some years in succession, I should not be surprised to find the curculios resorting to the tender branches of trees in order to perpetuate their species, and if I am not much mistaken, they have been so found.

What then is to be done in the curculios case? Is the crop to be resigned to them, or is fruit-growing to be entirely abandoned? These are very significant and very important questions. I, for my part, would counsel perseverance, and not an abandonment of fruit culture. But just here an important condition is involved. Every man who draws his sustenance and support from the productions of the soil, must accustom himself to recognize the circumventing and opposing character of insects as a *power* in the economy of nature; and that he cannot disdain or ignore their presence with impunity, any more than he can the elements of fire and water. The subject has been too much sneered at and trivially spoken of heretofore, and those who have given any attention to entomology have been too much regarded as simpletons. But in your pursuit of this subject do not rely upon your entomologist alone. In many respects you have far better opportunities to observe and develop the characters and habits of the insect world than he has, if you wish to embrace those opportunities.

But the main question, in a practical sense, in regard to the curculio, is how to circumvent or destroy it; and this question, I regret to say, has not reached a satisfactory solution. True, there are remedies without number, effectual and otherwise, some of them involving labor, and patient, persevering observation and application; but the people are looking for, and want, something as simple in the application, and as certain in its effects, as the taking of a violent dose of salts, and the certain evacuation of the bowels that follows it. Unfortunately for the fruit crop, the horticulturist, and the fruit consumer, such a remedy is not yet at hand. By a combination of laborious efforts, however, the race of curculios may be lessened, and finally exterminated. I would, therefore, recommend the trial of everything and anything in which there was the least reasonable hope of success, without subjecting the operator to palpable imposition. If there is any nauseous compound that will prevent these insects from visiting the fruit trees, apply it. If there is any nostrum that will destroy them wherever they may be found, try it. Wherever chickens, turkeys, pigs or birds will be beneficial, let them have access. If picking up the fallen fruit and scalding it will do good, pursue that course vigilantly. If they be brought down from

the trees, and then gathered and destroyed by jarring the trees, pursue that course vigorously, from the beginning to the end of the season. No reasonable effort should be left untried, or be relaxed, or be pursued with apathy or indifference. A general, efficient, widespread and continuous effort must be ultimately crowned with success. It cannot be that the Almighty, in the plenitude of his creative and counteracting power, has permitted a destructive insect to multiply and destroy his other beautiful and healthful productions, without vouchsafing to those for whom they were created, some means of circumventing or counteracting the operations of such insects. Learn to know what a curculio is when you see it. Find out its seasons of coming and going, and *how* it comes and goes. If there are any varieties of fruit totally exempt from, or less liable to their attacks than other kinds, find out what they are, and cultivate them. "In a multitude of counsel there is safety."

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## Ornithology.

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### TAKE CARE OF THE BIRDS.

At least one of the members of our Society for the Prevention of Cruelty to Animals has done good service in trying to educate the popular mind up to a full knowledge of the usefulness of the familiar birds seen in the vicinity of Philadelphia at different seasons of the year; and in pleading with the young sportsmen to cease hunting and killing them on that account, as well as for their cheerfulness, beauty and innocence. This view of the case is strongly enforced in a recent article in one of the magazines. Some naturalists have divided birds into three classes; those which are supposed to feed exclusively on insects, those which eat seeds only, and those which feed promiscuously on anything at hand. This classification has been proved to be founded on erroneous principles. Of the many thousand species of birds, it is not positively known that any do not feed on insects at some period of their lives, while at the same time but very few are exclusively insect eaters. The large class known as *omnivorous*, or eaters of all kinds of food, are among the most active and valuable assistants to the gardener and farmer in destroying insects. A recent writer, in pleading the economic value to agriculture of birds, declares that "no agriculturist can destroy a bird without knowing that he may expect from the act only injury."

The robin is generally regarded as the pest of fruit growers, and he certainly does plunder to a large extent the smaller fruits, but it has been demonstrated by a careful examination of the contents of his stomach that during six or seven of the months in which he is in this region he is exclusively a benefactor. During the early spring months, insects in different stages of development form his sole food. The larvæ of two

hundred insects of a most destructive class have been taken from the stomach of a single robin. In one instance it is remarked that a shooting match had created a scarcity of these birds, and a large extent of grass land withered and dried up in consequence of the undisturbed growth of insects. Later in the season, fruit was found in the crops of the robins, but always intermingled with insects, and in the fall of the year they returned to a strictly insect diet. The food of most young birds is almost exclusively of an animal character. It has been proved that a young robin will consume forty-one per cent. of animal food more than his own weight in twelve hours, and this food usually consists of earth worms, cut worms, and other destructive insects.

"The measure worm" or "span worm," that destroys the beauty of the shade trees in our large cities, and is such a nuisance otherwise, it is said has been driven from the Central Park by the English sparrow, recently introduced there, a pair of which will destroy four thousand caterpillars weekly. A thousand of these birds have been imported for the protection of the beautiful trees which are so justly the pride of Philadelphia. In addition to the worm nuisance, another in the shape of the cabbage butterfly of Europe, has made its appearance on our shores. It is said that were it not for the sparrow, the cabbage could not be raised successfully in Great Britain. We may have to meet this new enemy by introducing large numbers of its pretty little foe. Researches show that every species of bird has its particular use in the destruction of the injurious insects and vermin, which constitute the greater part of their food. Birds are in general far more useful than hurtful, and the popular desire should be to take care of, instead of exterminating these beautiful little allies of the farmer and fruit grower. Why boys should be the mortal foes of birds, it is hard to understand. It is perhaps an instinct of the old savage nature of man not yet rooted out. They should be taught better at home, at school and through the magazines and newspapers."

In addition to what appeared in our April number on the subject of birds, we commend the foregoing timely remarks from the editorial column of the Philadelphia Ledger, of March 25, 1869, as pertinent to the question of protection, especially at this season of the year; and when our local Society, as well as Agricultural and Horticultural Societies elsewhere, are directing their attention to legislation in the matter. We feel justified in occupying more than ordinary time and space just now, because, perhaps at no other season of the year are birds more capable of performing the functions of prevention by destroying insect larvae, than they are in the early part of the season. A notion, too, prevails, that the first robins, blue-birds, and other birds that arrive here, do not nest and breed here, but go farther north. This is, on the whole, a mistake, and if it were not, it could not justify the slaughtering of these birds, for whatever good they may do in any other locality, either north or south, is a good which

forms a part of the common good of the whole country.

We have not the "span-worm" that has been so destructive to the foliage of the trees in Philadelphia, in this county yet; nor yet the "canker-worm," so destructive to the foliage of the apple trees in the eastern States—at least there are very few of them here—but we cannot say how abundant they may become if the birds are all destroyed. Our Legislature ought to amend the bird laws so as to include, specifically, the names of a number of birds not therein mentioned, and which could not be included by the present law, without raising questions of interpretation. For instance, sparrows are not, properly speaking, insectivorous birds, and yet they feed two or three broods of young every season on insects alone. As these birds are not game birds, but are nevertheless often wantonly killed, their names should have been inserted in the body of the law. On the contrary, they are finches, (*Fringillidæ*), and after they have left the parent nest, feed principally on seeds and grains; and perhaps on wild berries. The common Wren, Willow Wren, Red-Start, and the different warblers, should also have been included in the unqualified prohibition. Larks, Robins, Cat-birds, Thrushes and Black-birds might have been included, specifically, in the list of game birds; not on account of their value as game, but for incidental protection during their breeding seasons. The following, from the columns of a high-toned cotemporary, is additional testimony in behalf of two species of birds, whose injuries to fruit, we think, have been greatly exaggerated, and whose benefits have been too little heeded by people in general. It is true that Cat-birds, in some localities, are hard on Clinton, Delaware, and other grapes of a thin skin and a small berry, but if the Wren is encouraged to nest and breed in or near the grapery, he will fight the former off if no other means could be found for that purpose:

S. S. R.

#### A GOOD WORD FOR THE CAT-BIRDS.

One rainy day, the past summer, as we sat by a window looking out upon the flower-bed, our attention was attracted to a Cat-bird, apparently buried head and shoulders in the soil and trying to extricate himself. Our first impulse was to run to his rescue, supposing him to be in danger from some hidden enemy; but we soon discovered our mistake when we saw him gradually emerge, dragging out with him, not without some difficulty, a very large grub of the May-beetle, which he had detected in the very act of eating the roots of our favorite geranium. The offender was forthwith pounded to a jelly, and in this condition borne off to the bird's nest hard by, where

it no doubt gladdened the heart of one of its nestlings.

Our good opinion of the Cat-bird is confirmed by the recent experience of President Hill, of Cambridge. A favorite elm, near his house, was attacked last summer by a large swarm of the vanessa caterpillar. They rapidly devoured its foliage, and threatened soon to despoil the tree of its beauty. One day, when he was about to bring ladders and attempt their removal, and was considering whether this was practicable, he observed a Cat-bird fly to the tree and begin to destroy the caterpillars. Seeing this unexpected relief, he deferred any interference and awaited the result. Nor was he disappointed. In a few days the Cat-bird entirely cleared the tree. The writer was an eye witness to a similar result, but in this case the tree attacked by the vanessa worm was a poplar, and the birds which cleared them out were Baltimore Orioles.—*Atlantic Monthly*.

## Editorial.

### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticultural Society held its monthly meeting, April 5th, at the Orphans' Court room, in the city of Lancaster, Henry M. Engle in the chair and Alex. Harris, Secretary. The minutes of the last meeting were read and approved without dissent. The following gentlemen were elected members of the Society, viz: John H. Miller, West Lampeter; Major Ellwood Griest, City; John C. Martin, East Earl, and Simon E. Greybill, of Strasburg twp.

J. H. Brackbill before signing the constitution spoke of the inconvenience of the name of the Society, but when he saw the word Agricultural as part of the name he was induced to become a member of the Society, and he was therefore ready to sign the constitution.

S. S. Rathvon, from the committee appointed at the last meeting for the purpose of reporting the law in force against the killing of insectivorous birds, read the law as now enacted and applicable to Lancaster county. The committee recommend the offering of additional rewards by the Society for the detection of offenders and also submitted a petition to be signed by the members, and presented to the Legislature for the purpose of securing additional legislation in order to prevent the destruction of insectivorous birds.

The report of the Committee was, on motion, received and adopted, and the petition circulated for signatures amongst the members, all of whom present signed the same and attested their concurrence in its demands.

S. S. Rathvon now proceeded to read an essay on "Snout Beetles."

As to the great utility and practical bearing of this essay, the President expressed himself in the strongest terms.

Peter S. Reist next read an essay upon "Pear Culture."

Upon the conclusion of this essay, J. H. Brackbill remarked his having planted last year, a quantity of pear trees and he desired to know what kind could be relied on for winter pears in this locality.

H. M. Engle suggested that the Lawrence could be relied upon as an excellent winter pear.

Levi S. Reist spoke of the Lawrence blossoming with him, but never bearing any fruit. Mr. Engle replied, "give it time." Mr. Reist conceded the tree to be young yet.

H. K. Stoner rose and spoke of the article on "Humbugs" in the February number of the FARMER, and stated that he had been intrusted in confidence with the receipt of the article condemned as the remedy for fruit trees, and he meant to give it a trial and report his experiments to the Society.

H. M. Engle said he had been likewise offered the same to try, but having no confidence in it he had not deemed it worthy of a trial.

Mr. Engle next proceeded to read an extract from Tilton's Journal of Horticulture on Fruit Growing in America.

S. S. Rathvon spoke of the necessity of making vigorous efforts to destroy the curculios, and he even suggested it as reasonable that laws should be enacted compelling communities to use their united efforts to destroy these insect fruit depredators.

H. K. Stoner had, in accordance with the receipt referred to, at an expense of \$2.50, made fifty gallons of a mixture which he regards as sufficient to keep all the curculios off his farm. He expresses himself as determined to give the remedy a fair trial.

The Secretary, by direction of the Chair, read an extract from the *Paris (Canada) Star*, on the hybridization of wheat, by C. Arnold.

Alexander Harris spoke of the success of the Goodrich potato as grown by a friend of his in Juniata county. From one potato, near a peck of fine, large, smooth potatoes had been grown. He infers that while the Goodrich proves unsuccessful in certain soils, it does well in others.

Levi S. Reist said he was able to grow more of the Harrison, as the finest potato that he has yet been able to grow.

A. D. Hostetter said the Early Goodrich should be planted early, as it is designed only for an early potato. The Harrison did not do well with him.

S. S. Rathvon referred to the report of the Experimental Farm in Chester county, in which it is remarked that stable manure has been found the best for potatoes of all other fertilizers tried, and that the Harrison variety yielded better than all other kinds.

J. H. Brackbill was pleased with the introduction of the potato topic. From one and a half bushels of Goodrich, he had grown 48 bushels; but a friend of his who had planted the Goodrich 10 days later, on land as good and equally well manured, the crop was a miserable failure. Mr. B. does not regard the Goodrich as a good potato, it being watery and entirely unsaleable.

Levi S. Reist spoke of the great injury done to a crop of potatoes by permitting weeds to grow amongst them, as it robs them of their nutriment and diminishes the crop by half.

H. Burns raised of the Early Goodrich and dug them in August, and found no difficulty in selling them for \$1.50 per bushel.

H. M. Engle regarded several things as essential to entire success in growing potatoes: good soil, good seed and good culture all being indispensable to insure a good crop of potatoes. Sometimes the difference of a few days in the time of planting them will make a great difference in the crop. The more rapidly the potato-tuber can be grown and perfected, its flavor and quality is the better. When the tubers mature in too hot weather the potatoes are rarely good.

Mr. Engle, the President, announced the following Chairmen of the different Committees, viz: on Fruits, Levi S. Reist; on Vegetables, G. W. Schroyer; on Plants and Flowers, H. K. Stoner; on Seeds, A. D. Hostetter; on Nomenclature of Plants, J. B. Garber; on Premiums, Dr. P. W. Hiestand; on Finance, Peter S. Reist; on Botany, J. Stauffer; on Entomology, S. S. Rathvon.

After the members had supplied themselves with the various seeds sent by the Agricultural Department at Washington, for distribution, and also had furnished themselves with such cuttings and grafts as various of the members had brought with them, Society, on motion, adjourned.

WE received some weeks ago—but have not had an opportunity to make an earlier record of it—the *First Annual Report of the Superintendent of the Eastern Pennsylvania Experimental Farm*. Some time previously we also received the *Programme* of the operations of the same institution for the present year, which we briefly acknowledged, in a few lines, in our February number. We regret that our space is so limited, because it prevents us from transferring both these documents entire to our columns.

The experimental results of the different kinds of fertilizers on grass; the relative merits of the different kinds of Oats, Barley, Corn and Potatoes; the different yields and qualities of the latter, as well as the modes of culture pursued, and the different kinds of fertilizers used in connection with them, must be of interest and importance to every tiller of the soil. The report on Potatoes in particular, is full from the first to the last, and is only excluded from this number of our journal, from its too great length for our space. The first series of experiments were on the four leading varieties, viz: *The Mercer, Monitor, Harrison, and Early Goodrich*, and we suppose their relative qualities, as human food, may be considered in the order of succession in which they are named. The first acre was planted on the 5th of May, and had 1000 pounds of phosphate applied. The second acre was planted the 11th of May, and had 14 loads of stable manure applied as a fertilizer. The same kind, size and form of seed was used in both cases. From these experiments, stable manure as a fertilizer is far in advance of any other fertilizing material in the market. Among the artificial fertilizers used, all other conditions being equal, *Shoemaker's Phaine* produced the most satisfactory result, viz: the largest yield of salable Potatoes, with as few cullings. The seed used in this last experiment was *large Monitor*, as contradistinguished from *small*, which yielded less.

The *form* of the seed used was whole tubers—large, medium and small—half tubers, quarter tubers, the latter planted with the root end, in some rows, and the blossom end, in others, down.

From these experiments it is manifest that the *Harrison* Potato is the most prolific, that is now under cultivation, in this, or perhaps any other country, yielding at least 150 per cent. more than the *Mercer* or *early Goodrich*, the two latter being nearly equal. Next, after the *Harrison*, in yield, comes the *Monitor*. Whole tubers, medium size, were the most prolific in the *Mercer* and *Harrison*; half tubers, large size, cut across, blossom end, were most prolific in the *Monitor*, and whole tubers, small, in the *early Goodrich*. Twenty-five other varieties of Potatoes were experimented upon, and the results given, of which the *Orono*, *Calico Cuzco* and the *Cartier* seemed to be the most prolific, but in quality they all appear to be inferior to the four first named varieties. We shall refer to this report again, in regard to other crops, at the proper season; but as being seasonable now, we may mention something about Corn. On timothy sod, ploughed late in spring, marked out both ways, covered with the hoe, and planted on the 27th of May, no fertilizer, dry seed, four grains

to the hill, and hills four feet apart each way, produced the largest crop and greatest weight of salable Corn, and the smallest proportion of nubbens. Of drilled Corn, the large nine-holed plate, yielded the largest, but not so large as that planted in hills. Of fertilizers on Corn, 400 pounds of Moro Philip's phosphate, per acre, sown on sod, on the 4th of May, and ploughed in, produced the largest.

We have seen one or two paragraphs in the newspapers in opposition to this enterprise, but they did not seem to be dictated by a liberal or enlightened spirit—therefore, the experiment should be further tried, before judgment is rendered. It seems to us that an institution of this kind, honestly, intelligently and practically administered, ought to commend itself to the approbation of the people. Thousands of dollars are squandered or purloined, through bad legislation, frauds and peculations, without much of a murmur on the part of the people; but when a small appropriation is asked for, in behalf of an enterprise of this kind, all sorts of selfish and sinister motives are attributed to those who ask it as a necessity.

WE have received the *Farmers' & Gardeners' Almanac* and illustrated Catalogue of the St. Louis Agricultural Warehouse and Seed Store, containing 160 pages octavo. This is one of the most complete catalogues for the farmer we have seen, interspersed with farming implements of all kinds. Those desiring a copy can obtain one by addressing Plant Bro., Platt & Co., St. Louis, Missouri.

## Miscellaneous.

### AN ACT FOR THE PROTECTION OF GAME AND INSECTIVOROUS BIRDS, AND REPORT OF THE COMMITTEE THEREON.

SEC. 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in General Assembly met, and is hereby enacted by the authority of the same,* That from and after the passage of this act it shall not be lawful for any person, within the County of Lancaster, to shoot, kill, or in any way trap or destroy any Blue-bird, Swallow, Martin, or other insectivorous bird, at any season of the year, under the penalty of two dollars.

SEC. 2. That from and after the passage of this act, no person shall shoot, kill, or otherwise destroy, any Pheasant between the first day of January and the first day of September; or any Woodcock, between the first day of January and

the fourth day of July; or any Squirrel, between the first day of January and the fifteenth day of August; or any Partridge or Rabbit, between the first day of January and the first day of October, in the present year, and in each and every year thereafter, under a penalty of five dollars for each and every offence.

SEC. 3. That no person shall buy, or cause to be bought, or carry out of said county, for the purpose of supplying any private or public house, or market, any Pheasant, Partridge, Wood-cock, or Rabbit, unless the same shall have been shot or taken in the proper season, as provided in this act, under a penalty of five dollars for each and every offence.

SEC. 4. That no person shall at any time willfully destroy the eggs, or nests, of any birds mentioned in the different sections of this Act, within said County, under a penalty of two dollars for each and every offence.

SEC. 5. That the possession of any person, in said County, of any of the game birds mentioned in the different sections of this Act, shot, killed, or otherwise destroyed, shall be *prima facie* evidence to convict under this act.

SEC. 6. That any person offending against any of the provisions of this act, and being thereof convicted, before any Alderman or Justice of the Peace, as aforesaid, or by oath or affirmation, of one, or more witnesses, shall for every such offence, forfeit the fine or fines, attached to the same, one half to the use of the county, and the other half to the use of the informer; and if the offender shall refuse to pay the said forfeiture, he shall be committed to the jail of the county, for every such offence, for the space of ten days, without bail, or mainprise; *Provided however,* That such conviction be made within sixty days after the committing of the offence; and all laws, inconsistent herewith, so far as they relate to said county, are hereby repealed.

JAMES R. KELLEY,

Speaker of the House of Representatives.

DAVID FLEMING,

Speaker of the Senate.

APPROVED—The seventh day of April, Anno Domino, one thousand eight hundred and sixty-six.

A. G. CURTIN.

The foregoing law, also applies to the counties of Chester, Schuylkill, Montgomery, Delaware, Mifflin, Northampton, Lehigh, Allegheny, Lawrence and Philadelphia.

Your committee therefore recommend, that in every case where a conviction under it takes place, within the county of Lancaster, as provided in said law, that this Society shall pay to informer an amount equal to that which he shall receive



from the county, and that a certified copy of the Alderman or Justice of the Peace before whom such conviction shall take place, shall be necessary to entitle said informer to the same; and that the Treasurer is hereby authorized to pay said amount, out of any money in his hands, and if none is in his hands, then if paid out of his own funds, the amount shall be refunded to him by voluntary contributions, at the next meeting of the Society.

### TIME'S CHANGES.

Many years ago, when Lancaster county was first settled by the "pale faces," a Frenchman traded with the Indians here. He was known by the name of "Indian Peter." There was then running through the county an "old road" to Philadelphia, used by the fur traders and others. It was on the lines between Warwick and Manheim, and between Leacock and the Earls. It was known from the Rapho line to upper Leacock and West Earl as the "old Peter's road," and between Lower Leacock and Salsbury as "old Peter's route." Peter was generally believed to have cheated the Indians in his intercourse with them. Hence, after his death, it was believed by the superstitious that his spirit was doomed to pass over this road for an indefinite time, making a noise in imitation of the Indians whom he had cheated. A similar superstitious notion existed in reference to a famous old hunter, who once, in a fit of ungovernable passion, threw his hunting dogs into a fiery furnace, that, as a consequence of this cruel act, his spirit, after his death, was condemned to traverse the airy regions of this neighborhood, making a noise similar to that made by his dogs when shrieking in agony in the furnace. That such, or similar unaccountable noises, were often heard, was true; and were generally attributed to the everlasting "hunter," or "Ewig Yachter." They were, however, subsequently accounted for on natural principles. In the then unfrequented and swampy portions of Lancaster county, the "Night-Heron" was a common, and sometimes numerous bird, selecting the cedar swamps as their favorite breeding and feeding resorts. They are sometimes called the "Quay-birds," from the fact that in flying through the air at night they utter a shrieking note that sounds like a hoarse and hollow pronunciation of *qua*.

The Night Heron (*Nycticorax Gardenii*) builds its nest in the top of a tree; therefore the removal of our forests and the march of improvement has driven them away from the haunts of civilization, to more congenial localities, and the number that now nest and breed in the county of

Lancaster must be very limited. An ornithological writer, in describing this bird, says that when a large number of them get together after night, as they fly through the air, their united croakings sound as if a hundred Indians were choking each other to death. Being concealed during the day in the tops of trees, and going abroad only at night, it is not surprising that the uninformed should associate their strange sounds with the inhabitants of the invisible realm. In their migrations they fly very high, so that they may often be heard without being seen; hence in the earlier days of our county, all sorts of superstitious notions existed in regard to almost everything that was not susceptible of an easy and common-place solution. A few years ago, a pair of Night Herons were known to have raised a young brood in a thicket, near Kline and Erb's mill-dam, on Hammer Creek, in this county, where one of them was captured by Mr. R. R. Tshudy, who for some time kept it alive. These are but the evidences of *time's changes*. As the cobwebs of ignorance are brushed away by practical education, and knowledge diffused among the common people, superstition and error will disappear before them like the mists of morning before a noon-day sun.

L. S. R.

**FERTILIZER FOR STRAWBERRIES.**—An experiment I made last year may not be amiss to the growers of strawberries. I procured a half hogshead tub and filled it with rain water, and into this I dissolved one quarter pound of ammonia and one quarter pound of common nitre, and allowed the mixture to stand in the open air, exposed to the sun. When my strawberry plants were coming into bloom I gave my bed a sprinkle of this solution in the evening for two times only, and the result was that I obtained double the fruit where the liquid was applied, to that obtained off beds along side, which had been treated equally, except in the sprinkling above noted.

JOHN G. KREIDER.

**ASHES FOR PEAS.**—The *Rural New Yorker* says, a woman sends us the following from her diary of her market garden: "In the spring of 1866, in sowing peas we ashed some in the row, leaving other rows unashed. The difference was very remarkable. Those that were ashed were more thrifty, of a darker, richer color, producing at the time of picking larger pods, and a superior quality of peas. The same is true of turnips."

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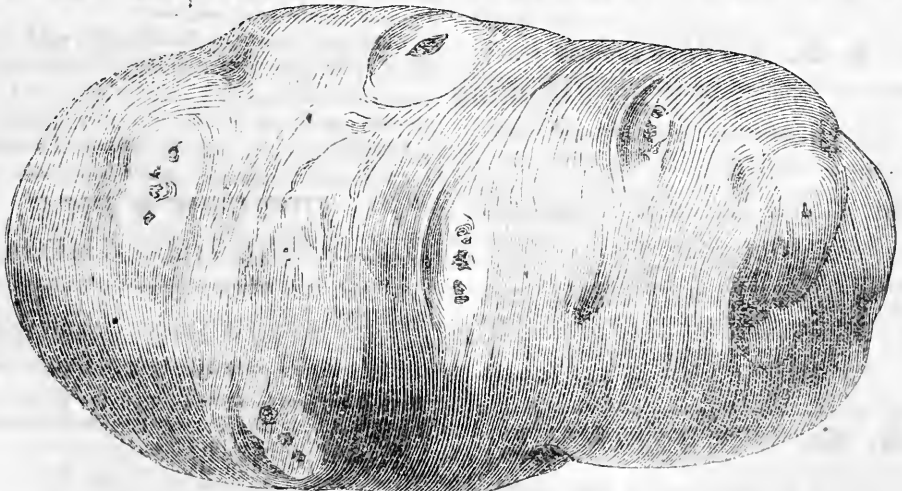
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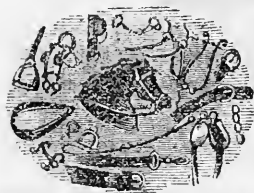
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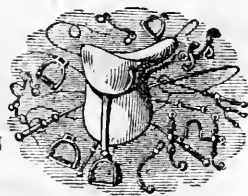
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# Lancaster Farmer

VOL. I.

LANCASTER, PA., JUNE, 1869.

No. 6.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

WYLLIE &amp; GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

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All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

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## Essays.

### VEGETABLE PHYSIOLOGY.

THE ROOT OF THE PLANT, AS AN ORGAN OF VEGETATION.

In regarding the root of the plant as an organ of vegetation, we give it a position at once of vital importance in the economy of vegetable life. Its functions are not as numerous, nor as varied as the vital organs of the animal; but its relation is just as essential to the existence of the plant.

We have already pointed out the peculiarities of structure, the capacity of the root to meet the wants of the plant, and its function or action of imbibition. To complete the enumeration of its functions we have yet to notice the action of digestion or assimilation. These fundamental principles are as much embraced in the organic structure of the root as they are in any other part of the plant. But its vital character is that which gives the root its leading significance, and which renders a thorough knowledge of all its characteristics necessary in order properly to understand its relations in the department of vegetation.

In the slow growth of the root, as it insinuates its worm-like form in the soil, seeking its rich sub-

stances, and absorbing the moisture laden with the various mineral compounds necessary to the sustenance of animal life, as well as vegetable growth, we are not apt to recognize any special physiological importance. But when we apply the laws of science, and draw out the principles of action which are surrounded by the mysteries of vital endowment; a new life seems to pervade the whole economy, and each part or organ of the plant possesses a significance of a fundamental character.

If we regard the root as a vital organ, embracing the functions of absorption and assimilation, we see at once the wise provision of nature in burying it deep in the earth, in order to preserve it from injury by violence, or the congealing and chemical agencies consequent upon the exposure above the ground.

Those functions are characteristic of every vegetable growth, but in the root of the plant they seem to be especially active. It is through this organ that the structure is fed, and to keep the whole growth in a vigorous healthy state, it is necessary that all the conditions be present in order to have the function act in perfect harmony with each other. If, for instance, there was an undue acceleration of absorption without the power to dispose of the material thus imbibed from the earth, the root would grow to an enormous size, with no perceptible benefit to the plant. If, on the other hand, this action was regular, and assimilation was enfeebled or retarded, the result would be equally disastrous.

The fluids absorbed by the root are not simply water, nor yet well elaborated sap, but must contain mineral matter in solution; and such matter to be effective as food for the plant, must go through a process of preparation. This process, then, brings it in direct contact with the external conditions and forces of vital action. There is here a mutual influence upon the root and the stalk, rendering the functions of the whole growth dependant upon each other, yet in every action perfectly congenial and harmonious. The office of the root in performing those functions is the point to which we at this time wish to draw attention.

All organized matter must be governed by those principles. In the animal they are established through the "*vis a tergo*," or propelling force of the heart, and are influenced by the complex character of the organization, and kept active by the decay and death of the tissue which passes off to be replaced by new formations. This process goes on in point of rapidity, in keeping with the nature and habits of the animal. Food is accordingly required in such quantities as will supply this waste.

In the vegetable, however, the arrangement is different. The organization being less complicated, and the habits less active, the demand for food is from the vegetating properties, to build up the tissue, ripen its fruit, and to supply the waste of fluid through the stem and leaves. All those actions are carried forward by a proper and peculiar arrangement of cells, corresponding to the minor organs of the animal, to complete the function.

There are peculiarities of size, organic complication and capacity, which influence the efficiency of those functions. The root as an organ is endowed with the same powers as the main body of the plant. With its absorbing action it must possess the ability to assimilate nutriment, or it would be destitute of the power of enlargement. We see also many plants where the fruit is developed entirely in the root, which could not be possible if it did not have this vital endowment as a distinct agency in its formation and structure.

In the higher species of vegetation where lignin or woody tissue is developed in great abundance, and deposited in such forms and character, as not only to preserve vitality, but to prevent exhaustion of the earth, we find the power of self-preservation in the glutinous sap intervening between the wood and the bark. This is true of the root as well as the stem or trunk. It is a substance which is elaborated before and after active vegetation; and gives the structure a kind of vitality or generative power, which precludes the idea of a constant strain upon the root for nourishment. There is thus capacity to retain nutrition and keep the tree alive, where plants of a lower order of vegetation would droop and die. So also in the animal. The formation is of such a character as to enable them to go many days without food or drink with but little exhaustion or injury. Muscle produces muscle, bone generates bone, nerve develops nerve in continuity with itself, all at the expense of the material supplied by the same blood arising from the capacity for a larger quantity of food than animals of a lower grade of organization.

This principle is beautifully illustrated in the growing powers of the tree, and enlargement of the root. From this cambium or glutinous sap the wood generates a new layer of wood, and the bark produces a new cylinder of bark. The lignous fibre predominates in the wood, and the cellular tissue in the bark—the whole process being performed by the functions under consideration.

In this interesting process there must not only be a harmony of functional power, but the structure in all its organic conformations must be in keeping with the species of plant which nature designs to be the result of the development of its vegetating powers.

As we pass from a consideration of the higher order of vegetable life—those plants and trees which live many years, in which the root assumes a central fibrous trunk, branching off into many parts, not only to brace the sturdy oak against the storm, but to gather its food—we find a variety of other forms of roots variously characterized, and with more or less limited duration. They differ in many essential particulars from each other, and curiously strive to react the same destination.

There are growths which spring from the seed, unfold their foliage and flowers, ripen their fruit, and wither and die the same season. Such annual plants are usually destitute of what is termed the "*radical*," or "*pre-existing axis*," but from the stem are at once thrown out fibrous branches affording ample absorbing surface for their nutrition. The corn and the cabbage are of this class, and the stalk composed of fibrous tissue seems to act as a depository for the nutriment which is rapidly gathered up by the roots in active vegetation, to be appropriated as the season advances, to the full development of the fruit. In grain, and in the grasses, a different order exists with regard to the stem and branch, but the absorbing power of the new and tender rootlets are well adapted to nourish the leafy branches and the ripening harvest. This maturing process exhausts the vegetable growth and the plant perishes at the close of the season.

There is another class of roots just the opposite to those above enumerated. They are what are termed the *fleshy roots*, such as the carrot, beet, turnip, radish, &c. There the root constitutes the fruit, and it is developed under the ground. There are also fibrils and rootlets to complete the same functional process as we find in other plants, with the difference that the latter retain the elements of nutrition where they are held as reservoirs of matter not only for their own subsistence, but for that of such animals as feed upon them. They are gorged with starch and the vegetable



jellies, which are elaborated within the body of the root by the aid of the little tuft of leaves upon the surface of the ground.

There are also "Bennial" and "Perennial" roots, which perish only after their second and third seasons of vegetation. Having surrendered their powers, like all created things of vital endowment, they fall into decay and death.

Secondary roots spring from any portion of a growing vine that lies on the ground, or is buried beneath its surface so as to provide the moisture and darkness they require, for such roots obey the ordinary tendency of the organ in avoiding the light and seeking to bury themselves in the soil. Most creeping plants produce them at every joint. And pieces of young stems of such plants as are propagated by cuttings will throw them out, where the proper conditions are applied, as tokens of the nature and character of their endowments.

There are also "*Aerial Roots*," and "*Parasites*" of various kinds and of peculiar habits which our space will not allow us to notice in this connection. Enough have been pointed out, however, to show their physiological relation to the subject in hand.

The root then as an organ has a function to perform. We have endeavored to show its capacity, and the adaptation of its structure for such function. It now remains for us to notice, briefly, some of the forces which condition its vital activity.

There must be power somewhere to put the structure we have contemplated in action. The germ, and the root, are but particles of matter and fabrics, unable to perform any action of themselves. We may readily contemplate an organism, and analyze its component parts; but that power which gives it life, and which renders it possible for it to meet the exactions of nature, must, after all, be supplied from some source or other, or it will forever remain in a state of torpor, and be inoperative.

When we speak of the union of an organism with its conditions in the vegetable, we are too apt to regard the earth alone as the sum total of those conditions. And when we regard the habits of the root as seeking the darkness, by burying itself in the soil, we conclude that a little moisture, with a good rich loam, is all that is necessary to promote the richest and most flourishing vegetation. These, of course, must be present; but, without *light* and *heat*, those chemical changes which condition the external force of vital action, can never take place. Light, therefore, as an external condition, although excluded from a direct participation in influencing the root to perform

its function, is, nevertheless, one of its most powerful agents.

There are principles in the economy of nature, whether in the vegetable or animal kingdoms, in which we find opposite elements in close proximity, and often blending their power to produce other and different compounds, or to balance properties and laws regulating growth and enlargement, and even vital energy itself. Thus in the animal, in the function of assimilation, the blood, when circulating through the systematic capillaries, yields a portion of its oxygen to the tissues, and receives from them carbonic acid.

On the other hand, when it circulates the pulmonary net-work, it gives up its carbonic acid to the atmosphere, and imbibes a fresh supply of oxygen. Now, the elements here at work are in direct antagonism in their influence and action upon the same species of life. Carbonic acid gas is a destructive agent to the animal economy, but it is a source of life and health to the vegetable; whilst oxygen, on the other hand, is life to the animal, but death to the plant. Here, then, are the same elements of life and death, running side by side in the same channels, not to destroy, but to produce life by the chemical changes occasioned by their mutual antagonism.

In rendering a plant a living organism this same process enters largely into the operation. Heat and moisture, light and darkness, though severally opposite in essence and principle, are indispensable adjuncts in moving the germ to unfold its vitality, and giving functional power to the root in the development of the growing living plant.

These are, of course, external agencies, and will be treated more extensively hereafter, but the importance of light, even as an indirect condition to the root, can scarcely be overestimated. Its influence is often confounded with that of heat, the two elements being combined in the solar beam. But heat, in the main, is less essential than light, a position well settled by most interesting and instructive experiments.

Mineral substances held in solution, are here to be formed through the chemical agents above enumerated, and those compounds are to be drawn into the plant through the medium of the root as a source of nutrition. Whilst heat and moisture may be regarded as factors in this transformation, their office unaided by light will never prove to be more propitious in this vital movement than the root would be without all those agencies combined.

Light must be regarded after all as the motive power, and darkness as an element of repose. A plant can live for a season in a dark place, just

as an animal, but when in this state vegetation ceases, and if held too long thus it must of necessity perish. Without this influence the order is reversed, and as in the "*fungi*" which seeks darkness rather than light, oxygen is absorbed, and carbonic acid is set free. Chlorosis thus sets in, and where death is not the result, the vegetable loses its flavour and nourishing properties, and is unable to fulfil its mission. Night, as a season of repose, is as invigorating to the plant as to the animal, for the waste consequent upon the action of vegetation can be to some extent recuperated. But to keep it thus perpetually is simply to cause it to droop and die, through a species of starvation for a want of the aliment of carbonic acid. Light calls all the powers of vital endowment into activity, and quickens the force of nature, and hence its essential character in the process of vital activity. S. W.

## Agricultural.

### MILDEW, OR RUST, AND ITS REMEDY.

As mildew is one of the diseases that proves hurtful to the wheat crop, it may be well to glance at it and endeavor to explain its cause and remedy, so far as science has been able to develop. It is not a disease that has but recently made its appearance, but one that is mentioned in history in the earliest ages. This disease is recorded as one of the scourges of the Jewish people, and it is likewise noted by Grecian and Roman historians. Ovid, describing the rubigalia, a religious festival, established by one of the earliest rulers of Rome, makes the priest say, "If the sun fervently heats the moist stalks, then, O dread goddess, is the opportunity for thy dread wrath. Be merciful, I pray, and withhold thy rusting hands from the crops."

The cause of mildew is a moist stalk heated by a hot sun; and hence heavy dews precipitated by clear, cool nights, and succeeded by a hot sun during the day, soon develops the disease. There are species of plants that live on the sap of other plants, and the mildew and smut are plants of this character. That these plants attach themselves to the stalks of wheat and grow thereto, and form mildew and smut we know from the developments of the microscope which has made known such astounding wonders within the last half century. The microscope shows the fact that the rust is a perfectly formed plant, having roots, stems, and branches, and producing seed too small for the unaided eye to discover. The seeds of this parasitic plant exists in the atmosphere in innumerable quantities, awaiting the con-

ditions essential to their germination and development. When the stalks of wheat are moistened from showery weather, no danger, it is believed, is to be experienced; but when moisture occurs from the precipitation of dew in cool nights, then the danger supervenes. Either the coldness of the night or the rapid drying of the moisture from the stalks, causes a contraction of the outer portion of the stem so as to induce splitting of the straw through, which the sap oozes out. The invisible and multitudinous seeds of the rust attach themselves to this sap, and burying in it, rapidly vegetate, striking their roots into the openings of the straw and thus divert to themselves the sap of the plant which should be used for the nourishment of the stalk and the ripening of its grain. As soon as these parasites have fixed themselves to the stalk, it shrivels and often becomes worthless.

The Romans, to avert the calamity of mildew from their crops, were accustomed to sacrifice a red female of the canine tribe on the altar of the Goddess Rubigo, the Priest entreating her to withhold her rusting hands. It is exceedingly doubtful if this remedy would prove effectual in our day, beneficial as it may have been amongst ancient nations. Hecatombs of dogs would be offered up if our farmers had as firm faith as the ancient Romans as to this method of preserving their crops. By the developments of the microscope it has been discovered that it is not in all stages of growth of the wheat plant that the straw is liable to split under the heavy dews and hot sun. It is only in its ripening stage that this result occurs. Hence, whatever rapidly shortens the ripening stage lessens the danger. For this purpose there is nothing equal to barn-yard or well prepared artificial manure, which has the effect of hastening the maturing of the crop. Again, when the wheat becomes affected with rust, it should be immediately harvested. This latter remedy might seem to the unobservant or unreflecting as ill advised and impracticable. This, however, may have been observed by farmers that the stem of the wheat plant will be found turning yellow immediately at the ground, from ten days to two weeks before it is fully ripe, thus indicating that the roots have ceased to supply the plant further with sap. Hence, whatever sap and nutritious elements are yet necessary to fill out the grain, must be in the stem and leaves. These (if the crop be not cut) the rust plants appropriate to themselves and abstract from the maturing grain. It has, however, been discovered that the cutting of the wheat stalks immediately destroys the life of the rust plants, leaving to the grain the sap and nutritious elements in the stem. The grains will mature in

the same manner after the stalks being cut as is the case with maize. When the corn is cut green the grains in a few days will be shrivelled and loose on the cob; but in two or three weeks, when the stalk is well dried, the grain is full and tight upon the cob. This arises from the continued course of the sap to the cob, and from thence to the grain. The same holds good in a much greater degree with the wheat stalk, whose roots cease their action before the maturity of the grain. Cut it, therefore, (when affected with rust) as soon as the stem begins to turn yellow at the ground.

A. II.

## Horticultural.

### WHAT WE HAVE DONE, AND NEGLECTED TO DO, IN HORTICULTURE.

Those who carefully read the history of American Horticulture will very likely be as forcibly impressed with that which we have neglected to do, as with that which we have really accomplished.

It is true that our progress in the past few years has been exceedingly rapid, and the strife for a still farther advance is without a parallel in this or any other country. There are hundreds of men at this very time who are hybridizing, crossing and raising seedlings of both fruits and flowers for the purpose of making improvements upon those already in cultivation. That some will succeed, and many fail, must be expected; but, upon the whole, progress is certain to be the final result. It is not always those who strive the most persistently, that have their labors crowned with the greatest success; nor is it those who take the lead in making experiments in particular directions, that reap the greatest reward. The lamented Brinckle taught us by his numerous experiments with the raspberry, that it was an easy matter to produce new varieties, and this has led others to follow in the same path, and we are expecting that the coming raspberry will be far ahead of its predecessors. It is a fact, however, that the most noted varieties of this fruit, now in cultivation, are accidental seedlings, and were not produced by the direct effort of any horticulturist. The Philadelphia, Doolittle, Miami, Clarke, Kirtland, and a host of others, are chance seedlings, no one claiming to have intentionally produced them. The same is true with our blackberries, for the Dorchester, Lawton, Kittatinny, Wilson's Early, Sable Queen, in fact the whole list can be traced to no better source. Here is an instance which either shows a neglect

upon our part to improve upon natural products, or a want of the requisite skill to do so.

With Strawberries we have no cause for complaint, for we have produced native varieties that are far more valuable to us than any that have been introduced from foreign countries.

Our Apples and Pears are fully up to the highest standard of excellence, known anywhere; but we lack something in the way of skill in cultivation, pruning, and training. This is, perhaps, owing to the fact that nature has been too lavish in bestowing upon us a soil and climate that permits neglect.

In the culture of the Grape, we have much to learn, and there is room for great improvement in varieties. The Delaware grape alone is sufficient proof of the fact that we possess the materials out of which a variety may be produced that shall equal, if not excel, all other known varieties, whether native or foreign. Forty years is certainly a very long time to spend in making so little improvement upon the old Catawba grape, as shown in the Delaware, Diana, Iona, and Walter; still, if we have moved safely and surely in the right direction, it should encourage us to put forth greater exertions in the future. Our progress, however, is not confined alone to what has been done in the way of producing new and improved varieties, for it is also apparent in our increased knowledge and abilities for doing more. Our people are rapidly becoming horticulturists, even if they do not practice it, and thousands of men can be found to-day who know how, and the laws which govern the art of hybridizing and crossing of species and varieties of plants; yet a few years since the operation was regarded as a secret among a few of the most learned in the profession. Theories and facts are rapidly approaching each other, and it is to be hoped they will soon be synonymous terms in horticulture. We have no sympathy with those who denounce all theories, and claim that we should rely entirely upon what they choose to call facts, or, in other words, practice.

Every grape-grower knows, theoretically as well as practically, that our wild fox-grapes are scarcely worth cultivation, but the stickler for facts would compel us to prove their worthlessness under cultivation. One scientific theorist can accomplish far more for his fellow-man, and in less time, than a score of those who call themselves matter-of-fact, and positive-proof men. It is not necessary to take a ride over Niagara Falls to prove that it would be sure death to the one who should perform such a feat. Neither should we be compelled to grow every fruit or flower for the purpose of proving that they are of no

value, when we have theoretically proved that such will be the result.

Again: we have proved, by long experience, the truth of the theory that all wild plants may be improved, or so changed that they will more fully meet our wants than they do in a natural state. If we acknowledge this to be true, and few will deny it, then we must also confess to our great negligence in not endeavoring to improve our native and too long neglected fruits. For the last fifty years our fruit-growers have been aware that the European gooseberry would not succeed with us, except in a very few localities and soils, yet it is equally true that scarcely an effort has been made to improve our native species, which possess naturally as many good qualities as the original species from which the European varieties were produced. A few possibly good native varieties have appeared in the last few years, but they may be regarded as only the starting point for further improvements.

The imported varieties of currants succeed so well that we have a better excuse for not improving our native kinds than with gooseberry, still the merits of the species found in our Western States and Territories demand our attention, and they should no longer be neglected.

The native Crab apple, Plum, Cherry, Persimmon, Paw Paw, June Berry, Huckleberry, and a number of other species of fruits, are now awaiting the magic touch of the scientific horticulturist. It is not necessary to dwell upon the merits of these fruits, nor attempt to decide what would doubtless result from a careful and persistent effort to improve them.

That they have not been cultivated and improved is sufficient reason why they should be, and it is to be hoped that, before another ten years is past away, no such cause for complaint will exist. It is not only our indigenous fruits that demand our attention, but our nut-bearing trees and shrubs are equally worthy of care and cultivation. Even a careful selection and propagation of our best wild varieties would be one step in the right direction, but even this much has, as yet, never been attempted. The Pecan-nut, Chestnut, Butter-nut, Black-walnut, Hickory-nut, and Filbert, will, at no distant day, be looked upon as worthy of cultivation.

J. G. K.

#### THE CHINESE TWINING HONEYSUCKLE.

Few things more adorn the dwelling than well-selected climbing plants. Among these, honeysuckles have long held a high rank, and very deservedly so.

The *Lonicera Flexuosa*, or Chinese twining

honeysuckle, which will now claim our attention, is one of the most desirable of them. It is one of the number that are devoid of objectionable features. Unfortunately, in this vicinity, some of them, as the Coral, and the Belgian Monthly honeysuckles, and also some others, are liable to be infested with the green aphid to such an extent, during spring and early summer, as to interfere materially with their growth and bloom. The Chinese Twining has, so far, here proved itself entirely free from this, and similar pests, which occasionally so much try the patience of the horticulturist; and being a free, vigorous grower, prolific in bloom, and perfectly hardy in all our winters, it is worthy of a place wherever there is true taste, and flowers are grown and appreciated. It is a perennial; once planted and established, it lives for many years, requiring a very small measure of care and attention. It blooms here in June, and produces its very fragrant flowers in such abundance as to perfume the surrounding air for a considerable distance. The first bloom of the season, which is by far the most profuse, continues for some weeks, and, after that is over, it will produce a scattered bloom from time to time, which is prolonged into fall. The leaves remain green nearly all winter, and some of them even hang fast, and remain partially green until the new growth commences in spring. It consequently, in this latitude, almost deserves to be called an evergreen. On account of their delightful fragrance and delicate beauty, the flowers are much in request in making up bouquets.

This creeper is well known, and is easily obtained from nursery-men. It is also already somewhat extensively planted in this vicinity, but not as much so as it deserves to be. D.

#### HOW TO RAISE LIMA BEANS.

The following article, which seems to wear a practical face upon it, we clip from the *Daily Intelligencer*, of this city, in its issue of Monday, May 17th. Although it may be too late to be of material use to our patrons, the present season, so far as planting is concerned, yet, in a number of other respects, it is timely, and, we think, very much to the purpose, and therefore we do not hesitate to give it to our readers without abridgment:

"HOW TO RAISE LIMA BEANS.—The following article of interest to farmers and gardeners is furnished us by our correspondent at Conestoga Centre:

"Although Lima beans have conceded to them the palm of superiority in quality over all other beans, but few persons undertake to grow them after several trials, on account of their failure to grow them successfully. Many have tried to

raise them, and but few have succeeded. This is owing to the want of proper treatment. We have grown them for a number of years, and have always succeeded in getting a good crop—a larger quantity than we could raise on the same amount of land of any other kind of beans. The principal objections to growing them are, that they come up badly, bear poorly, and ripen so late that the greater part are caught and destroyed by the frost, all of which can easily be obviated. Any person observing the following suggestions will find them to come up as well as corn or other beans, yield abundantly, and ripen before frost.

“The ground should be well worked, finely pulverized, and tolerably rich. A sandy loam is the best, but they will do well in any kind of soil except a stiff clay, as it gets hard on top, and they cannot come up through a hard crust. We plant them in hills  $3\frac{1}{2}$  feet apart, five beans to each hill, putting them *in on the edge*, with the eyes downward, and covering very lightly, just enough to hide them fully. After they are up we remove all but three at each hill. As beans do not remain under ground, and send up a shoot like corn, but the whole bean is pushed out of the ground, and Lima beans being very broad, they will have too much resistance to overcome in lifting all the ground with which they are covered, if they are laid flat and covered thickly. But if put in edgewise, there is very little weight upon them, and they come up without fail. They are generally planted too early, while the ground is yet cold and wet, and in consequence they lie in the ground several weeks, and the greater part of them rot before they come up, and the few that escape rotting and do come up are stunted. If planted after the ground has become warm, they will come up in a few days, and go right ahead. We never plant ours before the middle of May, when those of others are up, and still ours ripen first. The poles can be put to them when planted, or after they are up. They should be about eight or nine feet long, and should be stuck in the ground slanting, so that four of them will meet at the tops, where they should be tied together. This prevents the heaviest storm from blowing them down, as each one firmly holds the others; while, if put in without being fastened together at the top, they are easily blown down after the vines are on. They should be put in outside of the hills, and lean over them, then the vines will go up without any difficulty. They must, of course, be kept free from weeds. When the vines are about seven feet high, we pinch off the ends, and also all the laterals as fast as they appear. If the ends are not pinched off, and the vines kept free of laterals, the greater part of the substance will grow into leaves and vines, and each bunch will have but a few pods; the vines will keep on growing until caught by the frost, when but a small part of the beans have ripened. If the laterals are kept off, and the substance thus thrown into the fruit, all the bunches will be full, and the first fruit will all remain, and thus will ripen nearly at the same time, and before being overtaken by frost. This is an important part, and must not be neglected. They should not hang long upon the vines after being ripe, as they are easily injured by rain.”

## Botany.

### WEEDS.—No. 3.

#### BITTER WEED, RAG WEED.

This coarse, unsightly weed occurs in most cultivated fields, and is abundant among the stubble after crops of wheat and other grain. It is fortunate, however, that where the soil is good and properly cultivated, a good crop of clover and timothy will choke it out the next season, but like some other coarse weeds the seeds remain, and are always ready to spring up again whenever the grassy turf is broken up. This weed is common from Canada to Florida, and every one knows it, and it belongs to the composite family of plants, (the compositae.) The generic name given to this class of weeds by Tournefort, is a misnomer; he called it “Ambrosia;” the word implies *immortal* in the Greek language and used as the food of the Gods, (as *nectar* was the drink,) and withheld from mortals as containing the principles of immortality. But Botanists know this genus of coarse, common weeds by the name of *Ambrosia*. The Rag weed is the “*Ambrosia artemisiæfolia*;” the specific name is derived from the leaves resembling those of the wormwood, (*Artemisia*); hence it is also known as *Roman Wormwood*, and again by the common name of *Hog Weed*. Each section has its own local name. It is therefore better to have a universal name so that all who read Botanical works all over the world may know it by its scientific name, however inappropriate it may be in this case. Gray describes four species, all coarse and weedy plants. The Rag weed is much branched, from one to three feet high, hairy or roughish pubescent, leaves thin, twice divided, (twice pinnatifid,) and too common to require a fuller description.

The old adage that “there is nothing in a name, a rose by any other would smell as sweet,” may be correct, but to call such a nuisance by the elegant name of “*Ambrosia*,” makes it no food for the Gods, and although called *Hog Weed*, I doubt much whether hogs are fond of it. This reminds me of a circumstance that came to my notice, of a young country girl sent to a boarding school, where she heard about *Ambrosial* food and *Nectar*. Before her return home she wished to purchase some rare and pretty flower seeds to beautify the garden, and among others was tickled by the high sounding name, got some of the seeds of “*Ambrosia*,” and gave it a conspicuous place in the garden on her return home. She attended with great care to the rearing of her choice plants, but when fully developed her



mother took her to task for introducing into the garden the vile and execrable Rag Weed, so common all over the farm. A further investigation convinced her that it was not prudent to be governed in our choice by fine sounding words only; that we should first investigate the character and habits of plants or mortals before introducing them, and lavishing our attention upon them. Sallie learned a moral which her mother did not fail to impress more fully on her mind; it is not all "gold that glistens," nor every titled mortal, "Ambrosial." Even Majesty deprived of its external remains is a—"a jest." J. S.

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## Correspondence.

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MESSRS. EDITORS: In your April number, under the heading "Does Farming Pay?" your correspondent says, is a question often asked, "since John Forney made the contrast between Lancaster County and the South." How strange the story! Why, it is a question that was asked as eagerly before J. W. was born. He answers the question by telling us it *will* pay, if conducted on the "come-boy" principle. Now I do not know whether your correspondent is some theoretical dreamer, with a bilious *penchant* for the compilation of the marvellous, or a practical farmer who has ever seen or experimented upon the quaggy bosom of a well-filled barn-yard. But this I *do* know: there is considerable foginess in the mode he answers the question. To learn *how* successful men make farming pay, is the "wherefore" many of us study with eagerness from title-page to colophon, the contents of the FARMER. But to be told by *it* we must raise six, or perchance eight acres of tobacco, we stop short at once, and shudder to think that our beautiful Alma Mater shall be cursed by the same means that so impoverished the once fertile soil of Virginia, that it can now be bought for the beggarly pittance of \$2.50 per acre.

Another mode is stock raising "ten bullocks which are now worth \$100 per head." If it were not for the unthinking, this one of a jumbled group of heresies should pass unnoticed. What practical farmer, with transportation so direct from the broad prairies of the West, would think of raising steers on land costing \$225 per acre—*Raising* cattle, and *fattening* cattle, are two different things. It costs not a rod less than 90 acres to subsist those steers until they were 3 or 3½ years old. Deduct price of calves, (\$80,) and interest on cost of land, \$20250, and the cash value of cereals that might have been grown on

that land, and any good Lancaster feeder will net as much on ten well-selected Illinois steers in seven months.

Now, Mr. Editor, there is one system of farming does not pay, comparatively with other occupations—we mean the cropper; simply because there is too exuberant a growth of merciless middle-men, which denies him the same margin or rates that many other pursuits are conducted upon. It is true, there are some who acquire a respectable competence, not through easy profitability, but by much self-denial, and the most *rigid* economy.

There is another system we believe *does* pay, and from where we sit we see the "housetop" where lives the true type of the successful Lancaster county farmer, owner of the soil, independent, intelligent, well read in farm literature, and who possesses the rare qualities of *thinking* for himself, whose products are of the highest order, whose every acre is thoroughly treated with the phosphate of common sense, where every one of the varied departments of the farm is fully developed, and made to pay its proper dividend—that mode we propose to speak of more in detail; but the editorial curfew tolls, and, awaiting a clearer exposition of the *curriculum* of your correspondent's section—then DE NOVO.

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## Entomological.

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### THE PEAR BARK-LOUSE.

LACANIUM [ASPIDIOTUS] HARRISII.

Although this insect is generally found on young pear trees, and especially on the dwarf varieties, yet it does not confine its operations to these, but is also found on young apple trees, cherry trees, and in a few instances I have found it on the common wild rose, or "sweetbrier." These insects are very small, and can scarcely be seen with the naked eye, and yet they multiply so rapidly that I have seen young apple and pear trees rendered entirely worthless within three years by their numerous punctures, and the depletion of their sap. During the winter season, and in early spring, before the trees are in foliage, on the smooth part of the trunk, but more especially on the branches, a small, white, oblong, flat scale, scarce the eighth of an inch in length, with a small blackish or brownish dot at one end will be seen, sometimes in countless numbers, which when rubbed over with a hard instrument will leave a blood-like streak. Under these small scales are concealed from ten to twenty small red or pink colored eggs, which



when crushed leave the streak aforesaid. These eggs cannot be seen, except by those who have exceedingly sharp eyesight, but under a common magnifier they become plainly visible. Alkaline and Saline washes have been recommended for their extermination, but with only partial or temporary effect. Kerosene has also been recommended, but this is known to have killed the small branches. I have seen these insects effectually destroyed and removed entirely from a number of pear and apple trees the present season by Major C. M. Howell of Lancaster city, by the simple application of *neat's foot oil*, applied with a common paint brush, early in the spring, and before the bursting of the leaf and flower buds. It is presumed that other kinds of oil would be as effectual as the kind Mr. H. used, but whether they would or not, it is quite certain that the neat's foot has cleaned his trees on this occasion without damaging them by the *remedy*, which is sometimes the case. The effect of the oil seemed to be the loosening of the scales, which dropped off of their own accord, or were subsequently washed off by the rains, not, however, without leaving thousands of their blood red punctures on the smooth young bark. Without deeming it necessary to give a minute description of so small an insect itself, which is not much larger than the "red spider" of the greenhouse, I have thought the communication of these facts to the readers of the FARMER might be of some essential service to them.

It would be well perhaps to mention, that some oils are said to have been very injurious to trees, one of which is "tanners oil." Any oil that would form an incrustation and close the pores of bark or leaves, would be likely to have an injurious effect. With milder oils, that would soon dissipate or wash off, the result would be otherwise no doubt.

S. S. R.

## Editorial.

WE have received a communication from the proprietor or inventor of *Bower's Complete Manure*, taking exceptions to our editorial remarks in the May number of the FARMER, upon the results of the "Eastern Pennsylvania Experimental Farm," in reference to fertilizers. In our remarks we did not intend to make comparisons between the different fertilizers now in the market, but only to give the experimental results in reference to the cultivation of *potatoes*, and incidentally of *corn* as being just seasonable at the time. Of course, if what we said may seem to militate against the real merits of any

fertilizers not mentioned in our remarks, we will not hesitate a moment to make honorable amends for the same. On page 16 of the Report of the Superintendent of the Experimental Farm, is a table giving the results of different fertilizers experimented with on sundry rows of large *monitor* potatoes, which we find as follows: Bower's Complete Manure, 800 lbs per acre," produced in per row of 100 yards, 200½ pounds by weight of salable potatoes, and 3½ lbs of cullings or small ones. "Harrison's Plant Fertilizer, 800 lbs per acre," on the same amount of ground, produced 203½ lbs. salable potatoes, and 2½ lbs of cullings. "Shoemaker's Phaine, 800 lbs per acre," on the same amount of surface, produced 207½ lbs of salable potatoes, and 2½ lbs. cullings. In reference to corn, (drilled,) on page 11, we find the following experimental result, with superphosphates, sown on sod and ploughed in: 400 lbs of Moro Philips' Phosphate sown on sod 4th of May, produced per acre 5,325 lbs sound corn, and 459 lbs of nubbins. The same quantity of the same fertilizer sown on ploughed ground on the 22nd of May produced nearly 300 lbs less of corn, and where no fertilizer was used still less. On page 10, where the results of nine or ten different kinds of fertilizers are given we find the following:

"Harrison's Plant Fertilizer" produced 5,073 lbs of sound corn, by weight, to the acre, and 516 lbs of nubbins. "Bower's Complete Manure" produced 5,125 lbs of sound corn, and 443 lbs of nubbins per acre. In both of these cases 200 lbs of the fertilizers were used to the acre. But singular enough, where "dry seed, and no fertilizer" at all was used, the product was 5,486 lbs of sound corn, and 258 lbs of nubbins to the acre. In all these cases the gross results were more favorable to other fertilizers than Bower's, and therefore our editorial remarks are sustained so far as they go.

But, as we have promised to refer to the Report again on future occasions, and in order to "render unto Cæsar the things that are Cæsar's," as well as to enlighten our readers, we may as well do so now. On page 5 we have the results of eight different kinds of fertilizers used on timothy sod "of about uniform quality, and equally well set with grass." Bower's Complete Manure, applied April 11, 400 lbs per acre, produced 4,784 lbs of hay to the acre, the commercial value of which is given at \$10.60, (a ton we presume,) being a gain of 1,136 lbs over the amount produced where no fertilizer was used. Shoemaker's Phaine, under like circumstances, produced 4,768 lbs of hay, valued at \$10.40, being a gain of 1,120 lbs. The next most favora-

ble result was from Harrison's Plant Fertilizer. On page 6 we have the results of fertilizers on a clover field "of uniform quality, and nearly equally well set," in which Bower's Complete Manure showed the most favorable result, and next after it Shoemaker's Phuine. In this case the fertilizers were applied on the 7th of May, immediately before a heavy drizzling rain, 400 lbs per acre, and harvested the 18th of July. The increase in the first named was 824 lbs, and in the latter 608 lbs per acre over that upon which no fertilizer was used. In this case nine different kinds of fertilizers were tested, the results of some of which were very close to those named, especially Moro Philip's and Whaun's Phosphate. In reference to fertilizers on barley under like circumstances, sown on the ground on the 23d and 24th of April, thoroughly harrowed in, and the seed sown on April 27th, the following was the result: 400 lbs of Bower's Complete Manure to the acre produced 29 bushels and 24 quarts cleaned barley, weighing 972 lbs, and 1,448 lbs of straw. Nine kinds of fertilizers were used, including dry wood ashes, five of which showed more favorable results than Bower's; namely: Hewes' Phosphate, Baugh's Phosphate, Harrison's Plant Fertilizer, Shoemaker's Phuine, and dry wood ashes. Even where no fertilizer was used the result was more favorable than in several instances where they were used. The relative merit of oats without fertilizers may be of interest to our readers, even if it is too late for the present season. The White Poland, Black Hungarian and Norway produced the best yields, both in regard to quantity and weight of grain and straw, excepting cleaned grain of the Hungarian. The White Poland, 29 bu. to the acre, weighing 20 lbs per bushel, Norway, 14 bu., 11 qts., weighing 19½ lbs. per bushel, Black Hungarian, 17 bu., 21 qts., weighing 16 lbs. per bushel, and so on. We wish it distinctly understood, that in making these remarks, we are not officially endorsing or disparaging any man's fertilizer, but are merely giving the gross results of the experiments alluded to, for the benefit of our readers. If we deem it necessary and useful we may refer to this subject again in a future number of our journal.

#### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Society held its regular monthly meeting, May 3d, 1869, at the Orphan's Court Room, in the city of Lancaster, Henry M. Engle in the chair, and Alex. Harris, secretary. The minutes of the previous meeting being read, were ap-

proved by acquiescence. The following names were submitted for membership, and, on motion, duly elected, viz.: Dr. Saml. Welchens, city; John G. Tanger, of Pequa; Jacob Kline, of Ephrata; D. G. Swartz, city; Israel Johns, of Upper Lacoek; David E. Mayers, of Strasburg, and Adam Espenshad. Moses Brinton, of Chester county, was elected an honorary member of the Society.

Dr. Saml. Welchens being present, was invited to read an essay upon vegetable physiology, which he proceeded to do, and afterward submitted the same for publication in the FARMER.

Upon the conclusion of the Doctor's essay, Jacob Stauffer rose and remarked his entire acquiescence in the soundness of the positions mentioned by the essayist, and added, that persons, in the taking of up plants, should be careful to preserve as many of the small fibrous rootlets as possible, as they will grow the better. He said every grain of corn contains an ascending and descending axis, one of which is inclined to descend into the earth, and the other to ascend. Mr. S., while discussing the subject of the essay, was handed by the President, for examination, a bunch of blossoms which had grown out of a crab-stalk, at a point where before it had seemed perfectly smooth, and these he designated, in physiological language, as adventitious.

S. S. Rathvon called attention to a remedy detailed in Warden's Pomology, for the destruction of bark-lice. [See another remedy given in an article under Entomology.]

Henry M. Engle suggested that he had heard it said that bark-lice only attack weakly trees, and to this Dr. Diffenderfer replied that they had attacked all kinds with him, both sickly and sound. And he further remarked that they might be removed in the month of September, by rubbing them off with a cloth or brush.

D. D. Hostetter asked at what time the brood of the apple-tree borer is deposited, and was informed, by S. S. Rathvon, that the borer deposits its eggs from about the middle of May to the middle of June.

Moses Brinton asked how insects can be destroyed, and whether pear-trees should be cultivated or not.

Mr. Engle replied that he believed it to be a disputed matter, whether pear-trees should be cultivated or not; but, for his part, he had cultivated his.

P. S. Reist said he believed the question of the preservation of timber had never been brought before the Society. He has observed, in some of the papers, a new society which has been organized, in some of the Eastern States, which calls

itself "The Timber-preserving Society." He inquired if any of the other members of the Society had seen any notice of the existence of such a society.

Jacob Stauffer said a new patent had recently been taken out for the preservation of timber by the exhaustion of the sap of the wood, and by infiltrating the cellular tissues thereof with a certain liquor by means of hydraulic pressure.

Jacob H. Brackbill asked why dealers in timber desired to have trees cut when the leaves have attained their largest expansion.

Jacob Stauffer replied as to what might be surmised as a reason, but of the fact he was not before cognizant.

Mr. Brinton spoke of timber which had been cut in July and August, and which did not suffer any from worms; whilst that cut at other seasons had suffered very much from that cause.

Several other members believed Mr. Brinton had given the reason why dealers in timber prefer its being cut in July and August.

S. S. Rathvon drew attention to the late law passed by our Legislature, which imposes a penalty of \$25 for the killing of certain insectivorous birds which are specified in the enactment.

H. M. Engle hinted that if it was intended to hold a strawberry exhibition in June, it might, perhaps, be necessary to take some action at this time with reference to it.

It was therefore moved, by A. D. Hostetter, that a committee be appointed to consult as to the propriety of holding such an exhibition, and take such preliminary steps as the case may demand.

The chairman appointed the following members on the said committee, viz.: A. D. Hostetter, H. K. Stoner, S. S. Rathvon, Alex. Harris, Levi S. Reist, Jacob Stauffer, and Dr. Saml. Welchens.

Jacob B. Garber presented to the Society a root of a grape vine that had been grafted, and, where a perfect union had been effected, a result that been greatly questioned by physiologists.

After the transaction of some matter of minor importance, the Society on motion adjourned.

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#### IMPROVED CATTLE IN LANCASTER COUNTY.

As much noted as Lancaster county is in Conestoga horses, it has no promising record in the rearing of fine cattle, and, although Lancaster county furnishes well-fed steers in the Philadelphia market, and of her farmers are some who pride themselves as being considered leading cattle-feeders, yet raising good cattle in the country is a different thing. All the good cattle fed

in the country are raised in the Western States. Kentucky, Ohio, Illinois, Iowa, and Missouri raise the best of stock, and may be regarded as the leading cattle-growing States. In travelling over those States last summer, I noticed, almost everywhere on the prairies, nothing but the heavy Durham breed. In many places a law, or universally observed custom prevails, that no scrub-bull is allowed to run at large, and, in case one is turned out on the prairie, he is sure soon to be changed into a stag. It is owing to this custom that the Western people invariably have good improved stock. The people of Lancaster county might soon improve their stock, if they would be more attentive to the keeping of good bulls. But the excuse alleged is that cattle-raising does not pay in Lancaster county, and this may have some foundation as regards the raising of stock steers, yet most farmers keep from four to eight cows on their farm. The calves are sold off for the shambles, with the exception of a few heifer calves, and hence a carelessness as to stock prevails, because raising stock steers does not pay, as is alleged—our Lancaster county farmers hang on to the old breeds of cattle which were brought here many years ago; while, were they to choose their stock from the Western improved kinds, they would be well paid (as it occurs to me) for the raising of them, as these kinds would bring from ten to thirty dollars per head more in our markets than the old, unimproved stock. It is said by some that our ordinary cows are better milkers, and consequently more valuable; but this is asserted by those who have no knowledge of the Western cows, for the West produces milk cows of the finest kind, having large square udders, and such as would have brought from ninety to one hundred dollars at our sales. Only a few men in Lancaster county make a practice to raise good stock. Our people would have all opportunities to improve their cattle through the continual transportation of bulls and heifers from the West to our Eastern markets. Four years ago I saw one whole car-load of bulls brought from Kentucky, all heavy durhams, or short-horns, and not one of them could be sold for a breeder; and, as a consequence, all were purchased by one man for feeders, at only ordinary prices. When once a bull is three years old, it does not matter what quality he is, he cannot be sold for more than a scrub bull of the same weight. In fact, the people seem to make no difference between a neat improved, and a scrub bull. Durhams, so called, may differ in color, size, and weight, but ought not to differ in shape. On the Western reserves they generally have the red Durham tolerably heavy; in Kentucky they have the white Dur-

ham, very heavy. All over Illinois and Iowa, the white and roan calves are generally very heavy when first dropped, weighing frequently from eighty to one hundred pounds. These are improved in weight over the old English breed from which they are sprung, and this improvement has taken place chiefly in the blue grass country of Kentucky. The first Durhams brought to this country by Jackson, near Lancaster, were red and roans, neat in appearance, and not very heavy. The calves were very small when first dropped. Some of the full-blooded cows had sometimes a bulk in the back of the udder, which proved some objection in the selling of them. In the half-breeds and graded stock, however, the very best results followed. It is not specially of the Durhams or short horns that I wish to speak. It is the generally improved breeds that I particularly have in view, and I desire that our friends should endeavor to improve their stock, especially their cows, in the same manner they have done in the Western States.

L. S. R.

#### AN AGRICULTURAL LIBRARY.

Now that Lancaster county has an agricultural society and monthly organ, the LANCASTER FARMER, it seems to bid as if determined to keep pace with the improvements and developments of the age, one thing is yet wanting—he wants a well selected library of agricultural books on different branches of husbandry, and which shall embrace the standard writings of Thaer, Leibig, Humphrey, Davy, Boussingault and others who have devoted their lives to the development of agriculture as a science. Such a library at this time is what we particularly want, and by reference to the State Agricultural Report of 1867 it will be seen that many counties of our Commonwealth and Union have already secured libraries numbering several hundred volumes. Let not Lancaster county, the garden of the Keystone, lag behind her sister counties in this important particular, but allow her society in its next report to be able to name the number of volumes in its library. Let the Society move in this matter, and raise means sufficient to purchase the principal treatises on agriculture and horticulture.

### Miscellaneous.

#### PLANT A FEW RASPBERRIES.

In travelling through the country we have always noticed that raspberries are rarely seen in the gardens of our farmers. One reason for this scarcity is probably owing to the fact that very

few of the older and better known varieties are perfectly hardy. Farmers as a rule know little of the science of high culture or the care required to produce fruits from the more tender sorts that needs protection, and after they have tried them a few years without getting any returns for their labor they usually dig them up and put them on the brush heap. Now, a raspberry of fair quality is far better than none, and I advise those who have been disappointed in cultivating other sorts to try a few of the black cap varieties, or if they prefer the red raspberries plant a few of the Philadelphia, Ellisdale or Purple cane. These three will grow almost anywhere, and will yield abundantly, although they are not quite equal to the Fastolf or Clark. The Ellisdale is the hardest red raspberry that we have ever seen, and it is a rampant grower and wonderfully productive, although the fruit is neither very large nor handsome.

J. G. KREIDER.

#### “HOW TO MAKE THE BUTTER COME.”

I noticed, in the March number of the LANCASTER FARMER, an article, by J. B. G., entitled, *How to make the butter come*. It was well written, and the duties of the dairy are well described therein, as is too well known, by all those who have been raised on a farm.

The labor of milking is no longer incumbent upon women, in the Eastern and Western States, if ever it had been heretofore. Indeed, in some parts of New York and northern Pennsylvania, it is quite common to see men performing this labor.

Although Lancaster county has made some progress in its domestic character, and therefore women are now seldom seen performing field labor, yet “milking the cows” seems to be still entailed upon them. I think women ought to be relieved from this laborious operation, especially since men have been relieved from the slow and tedious process of tramping out grain with horses, by the aid of labor-saving machines.

But all this is not answering the significant question, *How to make the butter come?* Well, the thing may be done in this wise: In the *first* place, the cream must be kept at the proper temperature, and, if so, butter may be confidently expected in from 25 to 30 minutes. On the morning of the 9th of March last, just at the moment when a sudden change to intensely cold weather took place, I had but one cream-pot full of cream, into which I poured a pint of boiling water. Some prefer boiling sweet-milk—one or the other will answer equally well. One pint of boiling milk or water, to every common cream-pot full of

cream, will bring the mass to the proper temperature, in cold weather, to speedily form butter. In the *second* place, this process will increase the quantity and quality of butter, from a given mass of cream. In summer, when the cream is above the proper temperature, then add thereto, in like proportion, as above stated, very cold spring, or ice-water, in order to bring the cream to its proper temperature.

This has been my experience for the last twenty-five years, and has always been successful. The "proper temperature" is about seventy degrees of the common thermometer; a few degrees either way will not affect it.

ANNA REIST.

### BREAD.

A lady submits the following to the attention of our readers:

"There are so many ways for making bread, and all claiming to be equally good, that some feel puzzled which to choose. After an experience of 30 years housekeeping, and having never had sour bread, if at all, more than five times in those years, certainly some credit may be given to a few remarks on a subject so closely connected with health and life. "Oh, any one can make bread," somebody says, tossing her head, and any one can; but if I had not so often seen the best of housekeepers fail in this one point, this article never would have been written. One housekeeper always uses *boiled butter milk* and potatoes, and her bread is white and spongy. But it leaves a taste of acidity in the mouth after eating, and affects the stomach unpleasantly. Another will use nothing but *new milk* for her bread. It has a nice look, tastes well while fresh, but becomes stale and unpleasant very quickly. Sometimes they work in an egg to make it look nice, and then it dries even more speedily. Some boil potatoes and mash and pour water and all into the bread; some heat the whey of butter-milk or sour milk and mix with that. But none of these things give us a pure article, and they render the bread unhealthy.

Then there are various modes of managing the "rising" or "spone." Some set it over night and let it raise three times afterward, others set in the morning and by noon, or earlier, have it baked. Bread can be a very troublesome thing to manage, and it can be done with very little trouble and be good. I am not giving a scientific article, and shall write nothing on the chemistry of bread-making. But a few plain hints will be sufficient to the wise. The woman who always has sour bread is found in many places, the one who has it *very often* is still more readily found,

and both are giving slow but sure poison to all who eat at their tables. Much, perhaps nearly all the flour which has been sold the past year, has had the elements of acidity so strongly manifest as to require more care than formerly to produce good sweet bread. (Farmers have had to buy their flour as well as others.) Bread may be sweet and yet heavy and injurious, and it may be sour and look very fair.

Now, to insure healthy, palatable bread, I have found by experience that no elements should enter into its composition but pure flour, pure water and pure yeast. The kind Father of all has this year sent us good wheat, and no one but a covetous, speculating villain, would adulterate it. But I have seen very little flour sold this year past, in which I have not detected the presence of alum or white clay. In boiling the flour in the sweetest milk, entirely new, I have repeatedly found it to curdle, and abandoned all experiments to obtain good porridge, as useless. The same results took place when boiling the flour in water, which afforded proof positive of the adulteration of the flour. And these tests would be well applied by purchasers beforehand, in order to judge of the flour they buy. Pure, soft water is the article intended by nature to mix with our bread. Milk may be used for cakes of every kind. Potatoes can be used as food by themselves, but, worked into bread, make anything but the real "staff of life."

The character of the yeast is of the first importance, and during the heated term it spoils more quickly than at any other time. For many years I have used but one kind, and it never fails to make good bread. But it must be kept in a cool, dry place, and very tightly excluded from the air. Try it if you wish. Boil a very large handful of good hops in two quarts of pure hot water; boil it fast in a porcelain kettle, long enough to get out all the strength. While it is boiling stir a stiff batter of flour and cold water, into which stir a tablespoonful of sugar, and of ginger. Some add a tablespoonful of powdered alum, but I consider it unhealthy. Over this mixture, when the hops are sufficiently boiled, pour through a strainer hops and water, and press them tightly, and stir quickly into the batter. Let it stand till luke warm, then add a gill of sweet lively yeast. Set it to rise, it will not go high, but will become foamy on the top. After standing a day or so the foam will disappear, and the liquid will be at the top, the batter at the bottom, and one would think it had no life. But stir it thoroughly from the bottom and it will become foamy and light. One-half or two thirds of a common sized teacupful will make three good sized loaves. When



about a teacupful only is left, it can be used to start a fresh quantity.

At night take lukewarm water and stir in flour, with the cup of yeast also, and a tablespoon of salt, and set it to rise. It will be light in the morning, when stir in fresh flour till it is almost dough. After awhile it will be very light, when knead it into as much flour as you want to use, working in one mass on your flour-board. When it is light enough, but not too light, take it again to your flour-board, work it into loaves, and set it to rise in pans for the stove, or in baskets for the brick oven. Have the right degree of heat or three-quarters of an hour, and your bread will be fit for any table in the land.

Health requires that 24 hours shall be allowed after baking, to ripen the bread fit for the stomach. Economy also demands the same thing, for hot bread is very wasteful. If cooking-stoves could always have ovens lined with brick, our bread would be more wholesome than when baked in iron ovens. "Out-ovens," as they are called, are the very best bakers for bread, cakes, and pies.—*N. Y. Tribune.*

#### SELECTION OF SEED CORN.

The great basis of the important discoveries of the naturalist Darwin are summed up in the term "Natural Selection." The idea is that the external circumstances of nature are in a continual state of change, and that plants and animals have been endowed with a principle of slow but constant variation, somewhat related to the change in their external surroundings. Among these variations are some which are better suited to the changed condition of things than others. These get more aid and support than others from changed nature, become stronger, and then crowd out and utterly destroy those which are less suited to the new sphere. This principle is called *Natural Selection*. There are, therefore, in the vegetable and animal kingdoms two distinct principles—the conservative and the radical—the one seeking to maintain things just as they are, the other endeavoring to modify and improve them; but neither can do much only as external circumstances foster and favor them. These principles of construction and destruction are about evenly balanced, and neither can go very far away before it is brought back by the other; the change goes on just in proportion as any retentive strength is afforded it.

The value of this principle to us is in its application to selection for seed purposes. If man had never intervened, there would probably be 'yet but one kind of Indian corn.' Varieties would shoot out; but these, being relatively

weaker in proportion to the degree of divergence from the main type, would soon be killed out by the rest. But man notes the variation as something which would be useful to him, and *selects it*, giving it his special protection from the pressure of the rest; and the *conservative* power becomes gradually consolidated by his assistance.

This then should be the method of man in seed saving. If corn with thin cobs and large grain, be an object, select continually from those which have these characters; and in whatever point we notice a tendency to vary, or to approach our wishes in the line of variation, a selection of those points, followed up for a year or two, will produce marked varieties.

An absolutely new vegetable has just been given to the world by a French philosopher, M. Carriere. He conceived the idea that a kind of radish, growing wild, more or less, all over Europe and America, the *raphanus raphanistrum*, could be as much improved as the common radish has been from its progenitor, and allied species. The root of the natural weed is very hard and wiry, but he selected one which seemed a trifle softer than the rest. From this he sowed seed, and kept selecting, year after year, the softest, until now he has round, long, red, white, and all sorts of roots, as in the common radish. The flavor of the root is peculiar, and distinct from the common radish, and is described as being something between a turnip and the radish.

These experiments show how much may be done by man to aid nature in her principle of variation against the conservative element; and as the season of corn planting is at hand, it will be very seasonable to apply the knowledge to practice. He who shall raise a real first-rate variety may make his fortune, for the public soon tire of one hobby, and want new ones. The potatoe is king just now; but corn may turn up bye and bye.

#### VALUE OF THE CROW.

Some of our exchanges were startled when we pointed out that, with some faults, the crow was, on the whole, one of the farmer's best friends. It is gratifying to find that many of them are now joining with the *Weekly Press* in showing the real value of this bird to us. The *Atlantic Monthly* has had an able article on the farmer's feathered friends, from the pen of Dr. Thomas M. Brewer the distinguished ornithologist, in which he defends the crows as we have done; and the *German town Telegraph*, *Boston Cultivator*, and other enlightened papers, are following in the same wake. How long will Virginia offer a premium for crows' feet?—*Press.*



## NATIONAL POMOLOGICAL SOCIETY.

We hope our Middle State readers will not forget that next September the biennial session of the National Pomological Society will be held in Philadelphia, and that it will be their duty to show that they are not in that benighted state of ignorance which is frequently charged against them. True, the Legislatures of these States do little for agriculture; but the more reason that our farmers should bestir themselves, and show that they are not faithfully represented. The Southern and Southwestern States are moving with great energy, determined to show at least that they understand the value of their reputation. Even beyond the Mississippi they are awake to the effort—the Kansas Legislature having voted \$500 towards the delegation which will bring their fruits to the exhibition here; and in other places where nothing officially has been done by the States, the various agricultural and horticultural societies have taken steps to see their various localities worthily represented. In Pennsylvania absolutely nothing of any consequence is being done. Our State Agricultural Society, we believe, has taken no action whatever. Our State Horticultural Society has moved so far as to offer the use of their hall on Broad street for the meeting of the convention, but nothing more. Delaware and Maryland we have heard nothing from, while New Jersey has taken no steps, except so far as the ever lively local agricultural society of Vineland is concerned. They know its importance, and have already arranged to have their town worthily represented.

The citizens of Philadelphia seem hardly aware of the approach of the convention, which is in striking contrast with the enthusiasm manifested long in advance by other cities in which the meetings have been held. The few enterprising agriculturalists who went to St. Louis two years ago, to get the honor of the next meeting for this city, and who succeeded only to the chagrin of Cincinnati and other places, should not be left alone in their efforts to see the pomological branch of the agriculture of the Middle States have the justice done it, to which it certainly is entitled.

It is the boast of so many agricultural journals that most of their readers are from Pennsylvania and the Middle States, that it should be the interest of all of us to show that agricultural readers and excellent agriculture really go together. We hope the fruit men will take the hint in time, and make the event by their excellent contribution of *fruits* and intelligent *fruit men* worthy of themselves.—*Philadelphia Press*.

## DRAUGHT.

What is in agricultural matters technically called the "draught" of a vehicle, when in motion, or the ease or otherwise with which it can be drawn along, is badly understood by practical men. The following, from an exchange, affords a fine text for a few words in relation to it:

"A queer bet was recently made in Swansea, Mass. One man wagered that no horse in town could pull four bushels of corn (two hundred and twenty-four pounds) in a bag or bags, four feet, on a barn floor, the bags being fastened to an inch rope one hundred feet in length. The novelty of the bet attracted quite a crowd to witness the performance, but the first horse did the business easily. The principle which induced the wager was, that a small anchor, attached to a long cable, will fasten a large vessel, even in a very high wind."

To those who are at all acquainted with mechanical matters, it seems, in the first place, strange that any one should be willing to risk his money in favor of the long-rope side of the question, and then a little strange that a horse could be found with strength enough to win the bet; and yet any one who has had any conversation with teamsters generally, knows that he could find a hundred men, any day in the week, who would readily bet that it made no difference that a horse could haul as easily in a long set of gears as in a short one. "Any day in the week" one may see farmers' horses jogging along in shafts with traces eighteen inches or two feet longer than they need be, the owners or drivers all unconscious that they were adding from *one hundred to two hundred pounds* to the burden of the horse. Horses, too, in single file, are common enough, when they would be able to accomplish one-third more by being set in double stands. Sometimes we have to sacrifice one point to gain another. In mule teams, for instance, only very well broke animals will work together in pairs; and thus the single file often becomes the easiest managed, although with a loss of power. But in many more cases than usual much may be gained by attention to the main principle, that the closer the vehicle, the easier the draught.

## POTATOES IN HILLS.

The following, from an exchange, reminds us of a subject in which we once took great interest:

R. E., a successful potato raiser of Ohio, writes to the *Countryman* as follows: "I have tried raising potatoes in hills and in drills, in the same ground, and I am decidedly in favor of the former practice. When potatoes are planted in rows, so that they can be cultivated both ways with the plough, there is a great saving of labor; and I believe, also, that potatoes raised in hills yield as much and produce finer potatoes than when

they are planted in drills one way. I see no necessity of planting whole potatoes, when they are of good size."

The crop on the field where we saw the hill system tested was certainly very fine; but we do not think there was much more profit in it than in the row system. The theory was that by cultivating both ways, less hoeing would be required to keep down the weeds. But much hand-hoeing was necessary to keep the weeds out of the hills, and much more ground than actually necessary had to be given the crop. We have never known of any but our own single experiment. We should like to have it thoroughly tested this season, and some of our readers report their experience.

### LIQUID GRAFTING WAX.

We advise none of our readers to pay a dollar for a receipt for making liquid grafting wax. We have once or twice published such a receipt and again repeat it for the benefit of our subscribers. The following will make a wax that can be put on with a brush, will always be ready for use if kept tightly corked in a bottle, and can be applied to bruises or wounds on trees, or used as a grafting wax; viz: Melt one pound of rosin over a gentle fire; add one ounce of beef tallow and stir it well; take it from the fire, let it cool down a little and add a table spoonful of spirits of turpentine, and after that about seven ounces of very strong alcohol (95 per cent.). It will be necessary, after putting in the alcohol, to put it on the stove again, stirring it constantly, taking great care that the alcohol does not get inflamed. To avoid this, remove the kettle from the stove as soon as the mass, which may have cooled rapidly by the addition of the alcohol, begins to melt. Continue to stir, until the whole mass becomes the consistency of honey. This will be found far better and cheaper than the common shellac preparation used for this purpose; and after being put on for a day or two, becomes a clear, white color, and as hard as stone—impervious to water and air.

We charge our readers nothing for the above, and will warrant it better than that made from a receipt for which many will pay one dollar. The preparation for it has been proved and recommended by some of the best horticulturists in the country.—*Maine Farmer.*

THE following commendatory notice, clipped from the Lancaster *Intelligencer*, indicates that the FARMER is making a favorable impression in this community:

THE LANCASTER FARMER.—We have received the May number of this Journal and find it un-

usually interesting. It contains articles on the following subjects, viz: Vegetable Physiology, by Dr. S. Welchans; The Water Streams of Lancaster County and observations on Rain, by Levi S. Reist; Pear Culture, by Peter S. Reist; Hybridizing of Wheat, by Alex. Harris, Esq.; Truffles, and How to Grow them, by S. S. Rathvon; Weeds, by Jacob Stauffer; Snout-Beetles, by S. S. Rathvon—Take Care of the Birds, the same author; Times' Changes, by Levi S. Reist; Fertilizer for Strawberries, by John G. Kreider.

All the above articles are well written and contain much valuable information for the farmer and horticulturist. The LANCASTER FARMER is deserving of a large subscription list; the practical and able character of its articles should make it a welcome visitor to every farm house, not only in Lancaster county, but throughout the entire country. The FARMER is published monthly under the auspices of the Lancaster County Agricultural and Horticultural Society. Terms \$1.00 per annum.

### ANSWERS TO CORRESPONDENTS.

PEACH APHIS.—*B. B. H., Strasburg Twp.*—The peach leaves which you sent me, although in bad condition when I received them, contained specimens of the common peach aphid, or plant louse, (*Aphis persica*?) upon them, although they were almost too young and too much shrivelled to determine their species to a certainty. The ants on the same tree have nothing to do with the production of the aphids. They are there merely for the purpose of lapping up the sacarium fluid which is discharged upon the leaves by the former. Heavy rains wash off and destroy many of these aphids, but they may also be removed by syringing the trees with a soapy solution, or decoctions of tobacco or cayenne pepper.

SILK COCOON.—*W. L. S., Philadelphia, Pa.*—The cocoon enclosed in a leaf, sent me by the hands of Mr. B., of Lancaster county, which you say you took from the "Sweet Gum," is evidently a small specimen of the Prometheus Moth, (*Altacus Pomethus*), which does not confine itself to a single kind of tree, but may also be found on the Sassafras, the Wild Cherry, the Swamp Pink, the Button bush and others; but in this region it seems to be partial to the Sassafras. The moth comes forth about the end of June or beginning of July, some specimens of which are from  $3\frac{1}{2}$  to 4 inches across their expanded wings. The male is of a deep smoky brown in color, and the female reddish brown. Both have eye-like spots near the ends of the front wings, and various other markings; the females being usually the largest, with the markings more distinct than the males. (*See Harris, pp. 390, 391.*)

MAPLE LEAF GALLS.—*D. M. H., Mount Joy, Pa.*—The clusters of small galls on the upper surface of the maple leaves, which you sent me, are too young yet to be determined. I have seen similar galls on the leaves of the Grape, the Beach and the Sumac. In those of the last named, I found aphids. Two of the largest tubercles were hollow, and contained each a minute white egg. They will probably turn out gall-making aphids—we will have to wait until later in the season. Send more specimens then.

PEAR-SHAPED COCOONS.—*J. B. E., Beaver—Valley Nurseries.*—The three pear-shaped cocoons which you found fastened by long footstalks to a cherry branch, are beyond my ken. They were probably constructed by some species of spider. On cutting one open I found the whole internal cavity filled with yellowish eggs, and with nothing else. The cocoons are about the size of a marrowfat pea.

# World Mutual Life Insurance Company,

NO. 160 BROADWAY, NEW YORK.

## J. F. FREUAUFF, General Agent,

No. 5 North Queen Street, Lancaster, Pa.

### LOCAL AGENTS:

- A. B. REIDENBACH, Litiz, Lancaster County, Pa.
- SAMUEL L. YETTER, Elizabethtown, Lancaster County, Pa.
- J. M. GRAYBILL, Columbia, Lancaster County, Pa.

### LANCASTER REFERENCES:

- |   |  |
|---|--|
| JACOB BAUSMAN, President Farmers' National Bank.  | Maj. JAS. E. RICKSECKER, City Treasurer. |
| CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank. | N. ELLMAKER, Esq., Attorney.             |
| Messrs. BAIR & SHENK, Bankers.                    | B. F. BAER, Esq., Attorney.              |
| Judge A. L. HAYES.                                | Col. WM. L. BEAR, Prothonotary.          |
|   | J. F. LONG & SON, Druggists.             |

*No farmer is justified in exposing his creditors, his wife, or his children, to the loss certain to occur to them upon his death, without a Life Insurance Policy for their benefit, and in no Company can this be done with more safety and under better management than in the above. See one of their Agents and have him explain all about it.*

\$200.

\$200.

## HARVEST OF 1869.

# 66 "THE VALLEY CHIEF"

## A COMBINED SELF-RAKING REAPER AND MOWER.

After our success in the Harvest of 1868, in pleasing our customers with a neat, light, durable, and a complete Combined Harvester, we again come into the market for the Harvest of 1869 with our VALLEY CHIEF, feeling a great confidence in its superiority.

We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine is built with an eye to convenience, simplicity and durability. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower with a first-class Self-Raking Reaper, thus giving our customers a simple, strong and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

**MARSH, GRIER & CO:**

**A. B. KAUFMAN'S  
INSURANCE AGENCY,  
No. 1 EAST ORANGE ST.,  
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Issues Life, and also, Policies against Fire and all other Accidents.

AGENT FOR THE OLD

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The Best Company in the World.

**CAPITAL, - - - \$23,000,000.**

**Gas & Steam Fittings,**

Made to Order

On a new set of **STANDARD DIES,**

AT THE MACHINE SHOP OF

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**S. S. RATHVON'S**

**Merchant Tailoring, General Clothing**

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(KRAMPTON'S OLD STAND),

Corner North Queen & Orange Sts.,  
Lancaster, Pa.,

All kinds of Men's and Boys' Ready-Made Clothing and Furnishing Goods constantly on hand. Also, a superior assortment of French, English, German and American Cloths, Cassimeres and Vestings which will be made to order in any desired style, with the least possible delay; warranted to give satisfaction, and at reasonable charges.

S. S. RATHVON.

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DEALER IN

**Pianos, Organs, and Melodeons,  
AND MUSICAL INSTRUMENTS GENERALLY,**

A large assortment of Violins, Flutes, Guitars, Banjos, Tamborines, Accordeons, Fifes, Harmonicas, and Musical Merchandise always on hand.

**SHEET MUSIC:** A large stock on hand and constantly receiving all the latest publications as soon as issued.

**MUSIC BY MAIL:** I would inform persons wishing Music, that Music and Musical Books will be sent by mail free of postage when the marked price is remitted.

**DECALCOMANIA,** or the art of Transferring Pictures. Can be transferred on any object. I would call especial attention of Coachmakers to my stock of Decalcomania.

**LANCASTER CITY AND COUNTY  
FIRE INSURANCE COMPANY,  
OF LANCASTER, PA.**

**CAPITAL, - - - \$200,000.**

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Hon. THOS. E. FRANKLIN, Geo. K. REED, Edw. BROWN,  
Pres't, Treas., Sec'y.  
John L. Atlee, M. D., B. F. Shenk, Jacob Bousman,  
Henry Carpenter, M. D., F. Shroder, Jacob M. Frantz,  
Hon. A. E. Roberts, John C. Hager.

Houses, Barns, Stores, Mills and Buildings of all kinds, with their contents, insured on Favorable terms.

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**TWO \$10.00 MAPS FOR \$1.00.**

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These great Maps, now just completed, 64 x 62 inches large, show every place of importance, all Railroads to date, and the latest alterations in the various European States. These Maps are needed in every school and family in the land—they occupy the space of one Map, and by means of the Reverser, either side can be thrown front, and any part brought level to the eye. County Rights and large discount given to good Agents.

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DRUGGISTS & APOTHECARIES,**

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Have always on hand Pure, Reliable Drugs and Medicines, Chemicals, Spices, Perfumery and Toilet Articles. Also Flavoring Extracts of their own Manufacture, and of unsurpassed quality.

Sole Agents for HASSON'S COMPOUND SYRUP OF TAR, the best Cough Medicine in the market. We have also on hand in season an assortment of Landreth's Warranted Garden Seeds. The public can rely upon ALWAYS GETTING WHAT THEY ASK FOR AND NO SUBSTITUTES.

**GEO. F. ROTH,**  
**UNDERTAKER,**

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Coffins of all sizes always on hand, and furnished at Shortest Notice.

LANCASTER, June 25th, 1868.

EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business. H. B. PARRY.

## W. M. WHITESIDE, DENTIST,

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EAST KING STREET,

Next door to the Court House, over Fahnestock's Dry Goods Store,

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*Teeth Extracted without pain by the use of (Nitrous Oxide) Gas.*

## BOOKS AND STATIONERY.

A Full assortment of

SCHOOL, MISCELLANEOUS, AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

## STATIONERY,

WHICH WILL BE SOLD AT

## GREATLY REDUCED PRICES,

On account of removal April 1st, 1869, to

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(KRAMP'S BUILDING)

Four Doors above Orange Street.

Subscriptions received for all the Agricultural and Horticultural Magazines.

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Cheap Cash Book Store, No. 52 N. Queen Street, LANCASTER, PA.

## Dr. N. B. BRISBINE,

No. 93 EAST KING STREET, ABOVE LIME.

The Doctor pays special attention to all old obstinate diseases, such as Consumption, Liver Complaint, Dyspepsia, Rheumatism, all diseases of the Heart, Head, Throat, Lungs, Stomach, Bowels, Kidneys, Nervous Debility, General Debility, &c. The doctor makes examinations of the Urine. Consultation Free.

## S. WELCHENS, D. D. S., SURGEON DENTIST,

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HOWELL'S BUILDING, No. 65½ NORTH QUEEN ST.,

Half a square south of the R. R. Depot.

Twenty Years' Successful Practice in Lancaster

The Latest improvements in INSTRUMENTS and TEETH and the very best material, Warranted in all operations.

TEETH EXTRACTED WITHOUT PAIN with the use of Nitrous Oxide Gas, Ether, or the Ether Spray.

TERMS, as low as any in the city, when low priced material and low priced work are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

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Carpets, Oil Cloths, Window Shades.

SPECIAL ATTENTION PAID TO

LADIES' DRESS GOODS

Shawls and Embroideries, Cloths and Cassimeres, Handkerchiefs, Gloves and Hosiery, Best Kid Gloves.

New Goods Received Daily!

The Choicest of the Market, and at the Lowest Possible Prices.

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IN GOLD AND SILVER CASES,

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**Stoves!**

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**Housekeepers' Furnishing Goods!**

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are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

The Largest and Best Selected Lot of

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at Manufacturers' Prices. Also, every other article kept in a first-class Hardware Store.

A FULL STOCK OF

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BUILDERS will find a full supply of every thing suited to their wants at **LOWEST FIGURES.**

**CLOVER, TIMOTHY AND FLAX SEED,**  
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**MARBLE MASONS,**

14 South Queen St., Lancaster, Pa.,

Have always on hand or will furnish to order at  
**SHORT NOTICE,**

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TOMBS,

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&c., &c.

We pay particular and personal attention both to the SELECTION OF THE MATERIAL and the EXECUTION OF OUR WORK, and our facilities now are such that we can guarantee our customers the very best work, at the same, and often Lower Prices, than are usually paid elsewhere for inferior productions.

**Lettering**

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**English**

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ELEGANTLY AND CORRECTLY DONE.

We earnestly invite our country friends to give us a call.

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**Gents' Gloves, Capes and Collars,**

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DEALERS IN

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THE UNDERSIGNED REPRESENTS THE  
**BROOKLYN LIFE INSURANCE COMPANY,**  
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**Life and Accident Insurance Company,**

Both stable and well established companies, the former having a capital of \$1000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

All desirous of securing insurance upon their lives can do so by calling upon the undersigned.

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Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

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## German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

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For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hidebound, Loss of Appetite, &c.

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A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

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A substitute for curing Beef, Pork, Hams, Tongues, Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

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Old Chairs Re-painted and Repaired.

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Cabinet Work of every description and a full assortment of Chairs constantly on hand.

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EARLY GOODRICH,  
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By the Peck, Bushel or Barrel. Also,

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which is destined to supersede all of the older varieties for quality, earliness and productiveness, will be sold in quantities to suit purchasers. All the above varieties warranted pure and genuine. Send for circular.

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**BUILD LARGE AND SMALL ENGINES,**

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And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

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Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works in which the best work is turned out.

They also announce that they are now prepared to supply their

**NEW GRAIN SEPARATOR**  
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This Machine requires LESS POWER, does MORE WORK, and is considerably CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

Repairing of all kinds promptly done at reasonable rates

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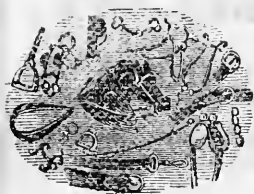
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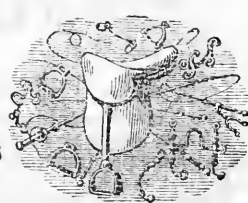
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TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



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Of all kinds constantly kept on hand or made to order. Repairing neatly done.

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N. B.—Any Book ordered can be sent by Mail to any address.

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## PLASTIC SLATE!!

### The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

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WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimonials New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built; stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
7. The testimony of Wm. M'Gilvray & Co., published herewith, shows that it is not only fire proof externally, but, is also a great hindrance to the spread of fire within.
8. It is much cheaper in first-cost than any good roofing now in use, and when all attendant expenses of the two roofs are estimated, costs only about half as much as the best slate, and it makes a better and closer roof.
9. For the roofing of foundries and casting-houses of blast furnaces, where there are gases of a very high temperature, which injures and destroys other roofs, this material is improved and seems to produce a better roof, (see certificates of Messrs. Grubb, Musselman & Watts, S. M. Brua and Wm. M'Gilvray.)
10. If in process of years cracks or leaks occur in Plastic Slate Roofs, they are about as easily repaired, as they would be to white-wash, needing only a brush and the Mastic, but no expensive labor of mechanics.

☞ The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Office of the Lancaster INQUIRER or EXAMINER & HERALD.

Persons wishing to examine PLASTIC SLATE ROOFS, and thus verify for themselves the following statements, are invited to call and inspect Roofs put on for the following persons, among many others:

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Orders for Roofing Should be sent to

**Joseph Gibbons,**

LICENSE FOR LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

Enterprise P. O., Lancaster County, Pa.

Or A. W. & J. R. RUSSELL, Lancaster, Pa.

Or MOSES LIGHT, Manheim, Lancaster county, Pa.

Or JOHN R. BRICKER, Litiz, Lancaster county, Pa.

ALDUS C. HERR, Lampeter, Lancaster county, Pa.

# THE FLORENCE SEWING MACHINES.

**THE BEST MACHINE FOR FAMILY USE.**

SIMPLE AND EASY TO LEARN AND NOT LIABLE TO GET OUT OF ORDER.

Capable of all varieties of sewing from the finest to the coarsest. Make the Lock  
Stitch alike on both sides, and use the least thread.

**W. F. DUNCAN, Agent.**

No: 65 NORTH QUEEN STREET, LANCASTER, PA.

## REGISTER OF WILLS.

We are authorized to announce that

**DR. WILLIAM M. WHITESIDE,**

late Lieutenant of Company E, 10th Regiment, first three months service, and  
Captain of Company I, 79th Regiment Penna. Volunteers of Lancaster, is a  
candidate for REGISTER of Lancaster county, subject to the decision of the  
Republican votes at the ensuing Primary Election.

### CARD!

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ESTABLISHED IN 1785,

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The reputation of REIGART'S OLD WINE AND BRANDIES for purity and excellent quality having been fully established for nearly a century, we regret that the conduct of some unprincipled dealers, who re-fill with and sell from our labled bottles their deleterious compounds, compels us to adopt the annexed trade mark, which in future, for the protection of ourselves and our customers, will be found on all our old bottled Wines, Brandies, Gins, Whiskies, Bitters, &c.



TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to prosecute to the fullest extent of the Act of Assembly, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

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As Mr. Keeler has been in this business 16 or 18 years, and having served an apprenticeship at Coachmaking, he knows what the trade want in that line. All kinds of Bent Stuff for sale, or made to order—and Spokes of all sizes turned for persons having them on hand in the rough.

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**KEELER & SHAEFFER, Lancaster, Pa.**

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE PLANT, ITS STRUCTURE AND CONDITION.

In a proper physiological examination of the plant, it will be found that it possesses all the organs necessary to a complete development of its growth, and a perpetuation of its kind. They are so arranged as to meet in a proper manner and to the best advantage the conditions which nature designed should produce that peculiar property which we term vital endowment. There is a marked difference between the general appearance and conformation of those organs in the well developed plant in regard to locality, and the structural capacity to meet the wants of the organism through its functional power. The root and the leaves, for instance, are the principal organs of nutrition, yet they are not only widely separated by the stem or axis, but in point of form and structure there is no perceptible similarity, and yet there is a mutual dependence essential to the very life of the growth.

We further notice that there is a difference of a corresponding character in the *intimate structure* of these organs. Those parts most concerned in this vital operation are made up of aggregations

of *cells* which seem, in all essential particulars, to be the same from the germ upward, and yet in one class of vegetation the structure is supported by a frame work of woody fibre, whilst in the other, the tissue is weak and yielding with no power to resist the changes of climate or temperature, or the injuries to which all vegetation is more or less subject.

The difference of distance, as well as structure, in many of the higher forms of vegetation, require another arrangement by which the air and fluids are transmitted from the root to the leaves, instead of from cell to cell, as is characteristic of the lower species. There are *ducts* interposed, forming a separate and ready transmission of those elements without the necessity of their passing through cells which are devoted to other functional offices. These organs are all mutually dependent and connected, and contribute, each in its own special manner, to the life of the plant as a whole.

The highest organic vegetable structure does not possess a very large variety of organs, such as are found in the animal for instance, but the most essential ones are many times repeated, so that the loss of some of them does not involve the destruction of the plant. Their separation often gives rise to new plants by evolving themselves into adventitious buds or branches of the same organism and thus develop the ability to maintain an independent existence in a multiplication of the products of the original germ. When this is the case it is the result of a modification or interruption of the ordinary nutritive process, and cannot be regarded as a true or normal generation or the reproduction of the species. This distinction in the reproduction of the plant, and especially of the higher order of vegetation, is regarded as of considerable importance. The individuality of the branch thus generated is denied, in as much as its growth is contrary, and consequently antagonistic to the true *germinal* process, since on it rests the recognition of organs in the lower grades of vegetable life.

All these principles and peculiarities, however, are governed by the nature and character of the

growth. The broad principle and law of every form of organic life, is patent in the fact that all the endowments and conditions of vegetation in the full grown plant, must be present in the germ or it never can reach that state in which it can be distinguished from inert matter.

We may not be able fully to explain what that peculiar property or essence, which is termed life, may be; what it is that germinates, forms the root, pervades the stem and brings forth the foliage and the flowers, or what that mysterious principle is, which, when dismissing the bloom, develops the higher and more glorious form of the fruit. But through the application of the laws of science, and by research and the various experiments upon organic matter, we can, to a great extent, draw forth the plant from the mystery which surrounds its growth, analyze its structure and note some of the forces and conditions concerned in the production of vital activity.

There is no part of the globe that is entirely unfit for living beings to reside. And where there is animal life, there do we also find vegetable life. The broad empire of flora is commensurate with the animal kingdom, and they have no limitation. In the Arctic circle where trees and shrubs and plants of advanced power of organization are forced to disappear before the storms of perpetual winter, a low Cryptogamic vegetation is still to be found. And at the Equator dense forests of leafy evergreens attest the universality and unbounded dominion of the vegetable kingdom. The forces and elements of vitality in the opposite zones, and those which condition the character and organic texture of every variety of growth in intermediate localities are of necessity peculiar to temperature and climate. Where these are not congenial, there is not only a debilitating influence upon the vital functions of the plant, but there is an interruption in the external conditions of growth, and the result is either a miserable dwarf, a monstrous malformation, or no growth at all.

When the climate is congenial, there is a favorable influence upon the actions of the organs of the plant, and a good healthy development is the result. But change this order of things, reduce the heat which is natural and congenial to the growth so low as scarcely to allow it to live, and all the functional power which is left in the circumstance, is the ability simply to absorb the nutriment, with no power to assimilate it. The tissue then, instead of being built up with solid vegetable matter, becomes distended with a watery fluid which renders it incapable of bearing fruit and unfit as a vegetable substance to be food for the animal.

In tropical regions, on the other hand, the temperature being too high for such plants as may be found in the Temperate or Frigid Zones, and thus the force of life being rendered too active, there is a derangement of the organs causing an injury to the productiveness of the plant fully as disastrous.

It is in the Temperate regions that rich meadows abound with tender herbs, and fruit and flowers attest the congeniality of climate, and where the largest variety of vegetable structure is found.

The conditions of growth are of two fold character—the internal and external. The internal are those peculiar to the structural arrangement, whilst the others are those which embrace the element and condition of vegetation by external influences.

The most obvious division of vegetable life, wherein size and duration are expressed, is that which has long been known as trees, shrubs and herbs. In the development of each of these several divisions there are peculiarities of structure which require some notice in order to make our subject intelligible to the casual reader.

The external characteristics of growth in those several divisions are very simple and obvious. In trees and shrubbery the stem becomes hard and woody; but in its early development there is a succession of similar parts of soft and yielding tissue one upon another. The rapid growth or accumulation or formation of organs and tissues produces an elongation of the stem, throughout its entire length. "The nodes or leaves they bear are first formed in close contiguity with the preceding ones; then the internodes appear and by their elongation separate them, and so carry upward the stem. To have a good idea of this, we have only to observe the gradual evolution of a germinating plant, where each internode develops nearly to its full length, and expands the leaf or pair of leaves it bears before the elongation of the succeeding one commences. The radicle or internode which pre-exists in the embryo, elongates and raises the seed leaves into the air. They expand and elaborate the material for the next joint, the leaves of which in turn prepare the material for the third, and so on. The internode, or space between the knots lengthens principally by the elongation of its already formed cells, particularly in the lower part, which continues to grow after the upper part is finished."

When the embryo tree begins to develop its two fold substance of Lignin, and cellular tissue, there is a condensing process by which the woody fibre is thrown in towards the centre, and the cellular tissue is hardened into the epidermis or bark.—

The waste of tissue being in the dense wood in the heart of the tree, and in the rough surface of the bark. This process is carried on by the cambium or glutinous sap intervening between those two principles of growth. This substance is composed of cells laden with the elements of those several tissues, which in the function of assimilation, are consigned to their respective localities. Shrubs and trees are thus constructed, and by virtue of the complexity of their organization they can retain aliment within themselves in such quantities as the nature of their growth requires, where a constant drain upon the absorbing power of the root, and the sterility of the soil will not be required.

All the higher order of plants, termed "*Phænogamous*," possess stems. In those which are said to be "*acaulescent*," or "*stemless*," it is either very short or concealed beneath the ground.—Stems do not necessarily assume an upright position, but sometimes trail along the surface of the ground, or burrow beneath it. The stem or ascending axis thus form a complete organ and constitutes one of the leading features of the species of plant we have just been considering. It gives rise to another organic part, namely, the leaves, which will be treated hereafter.

The essential characteristics which distinguish *Herbs* from trees and shrubs, are in the nature of the tissue forming the structure. In the former, the fabric does not become hard and persistent, as does the woody fibre in the tree and shrub, but the cells remain open in order to allow a free transmission of the sap and air, in the process of vegetation. This kind of tissue requires a larger proportion of the conditions of growth than that of a higher organism, where a quantity of aliment is stored within the trunk for future assimilation.—The rapid growth, and the excessive excretion of fluid in the herb, demand a constant supply of nutriment, and if all the conditions of vegetation are not present, especially warmth and moisture, there cannot be a vigorous development.

This species of vegetation being similar to the structure of the leaves of trees, and requiring those conditions incident to climate and temperature, and not calculated to withstand the frosts of autumn [and the congealing blasts of winter; flourishes but for a season, yields its fruit and flowers and seed, and then dies.

The effect of climate and temperature upon the harmonious operations and actions of these organs which characterize all vegetation, may, to a great extent, account for plants of one locality not flourishing as well when transferred to another. In tropical regions, the physiological structure of the plant is especially adapted to the

climate. The organs of vegetation, the sexual organs, and the whole process of germination, must necessarily conform to the external conditions, which are regulated principally by heat.—When a plant is out of its latitude, it is necessarily removed from the proper external conditions of growth. "Thus it has been remarked that shrubs growing among the sandy deserts of the east, have as stunted an appearance as those attempting to vegetate in the Arctic regions; their leaves being converted into prickles, and their leaf-buds prolonged into thorns instead of branches. The influence of excessive heat in destroying life can sometimes be traced through the direct physical changes which it occasions in the vegetable tissue."

Where there is this disturbance in the vegetative powers of the plant by an attempt to transpose its native elements, is it not plain that the sexual organs will also be destroyed, and if so what wonder that the fruit peculiar to the tropics, cannot withstand the congealing changes of the temperate zones, and that of the latter on the other hand will become sterile and barren in an atmosphere entirely unfitted for its powers of reproduction, and ultimate fructification.

If corn, for instance, cannot germinate in a higher temperature than 95 degrees, and is necessarily sterile when placed in soil which will reach 120 or 140 degrees, how can it be expected that a grape vine which flourishes best in the latter temperature, can bear fruit in the former. The loss of the power of germination in the corn when imbedded in soil of 140 degrees of temperature is occasioned by the rupture of vesicles of the starch which enters so largely into its composition. This, of course, is a destruction, not of its vitality, but of its power of reproduction. The seed undergoes a disorganizing process and cannot become productive. Apply this same test to the fructifying plants of the tropics, and a similar condition of affairs may be expected.

There is a variation to these general rules, which amounts almost to a law of tolerance. The temperature most favorable to germination varies in different species, and perhaps may condition the adaptation of climate. And accordingly, by proper culture a plant may be brought to a pretty respectable state of vegetation, but be unable to bear fruit, when it is removed from *all* the conditions peculiar to its climate. It may not lose its vitality for years, but the differentiation of its sexual organs may not approach that standard necessary to render them effectual and a loss of the power to bear fruit is the result.

If there are physiological discrepancies therefore, in the growth of the plant, as developed

through its habits and the results of its germination, they must be attributed to a transposition, or an attempt at hybridizing, rather than a fundamental deficiency of physical structure.

S. W.

## Agricultural.

### THE ORIGIN OF WHEAT AND ITS CULTURE.

I consider this as one of the most useful subjects that can be brought before our society in anticipation of harvesting an unusually good wheat crop the coming harvest. Wheat is extensively grown in Europe, Asia, Africa, North and South America. On the plateau of southern Peru, Meyen saw a most luxurious crop of wheat at a height of 8500 feet, and at the foot of volcanoes at an elevation of from 10,600 feet to 12,800. Wheat seems to be cultivated by almost all nations, both civilized and uncivilized, but it is no where found to grow wild. Wherever it exists it is supposed to have been dropped by human agency or by migrating birds. Wheat is found in all the Territories from the Missouri River to the Pacific ocean. It is supposed to have originated from a grass known as *ægilops ovato* found in Italy and France.

Mons. Esprit Faver, of France, has made an important discovery on this point in 1838. He took seed from the *ægilops*, planted it in the fall and cultivated it from 1838 to 1850, when it had become perfect wheat.

It is true (and we have no reason to disbelieve it) that wheat has been improved by culture, this may be the reason why it has always a tendency to degenerate. We had many varieties of wheat for the last 40 years, and each variety was soon supplanted by another, except the old Mediterranean, imported in 1836-7. It was the most productive variety up to 1848, when Mr. Metzler, of Paradise township, selected some heads of wheat from the old Mediterranean, for which he deserves all honor. What he selected was superior to the old variety and was named the Red Mediterranean wheat, and this has ever since been cultivated in Lancaster and the western counties of the State and the Western States generally.

Selecting new varieties of wheat is entirely too much neglected by farmers. It is very much to be regretted that our society is not able to offer good premiums to the best new varieties of wheat selected from the wheat the coming harvest. I would recommend that our members and all others would make observations about the time

wheat ripens and select some of the earliest heads from the fields. No doubt in this way new varieties could be discovered; the earlier the variety the better; the earlier the less subject to the weevil and rust.

A successful wheat grower used to mix two varieties of wheat before sowing it, and with good results. I would like to see the Mediterranean and Canada flint or Rappahanoc mixed. I would not approve of mixing an early and late variety. I believe if that process had been practiced and good selections made out of those mixed fields, we might now have wheat superior to the Mediterranean, both in yield and in quality. This is a matter that could be done by any farmer, and not like hybridizing wheat, which requires a skilled hand to perform it, as practiced by Linnaeus. As this is just the season, I will give the process of Mr. D. T. Browne. This process consists in bringing the pollen which is contained in the anthers of the one flower in contact with the stigma of the pistil of the flower intended to be impregnated.

In order then to hybridize, it is necessary to take the heads of wheat which are intended to be the parents, both male and female, when they have arrived at that state of maturity when the pollen is in its proper state, or before any of the anthers have escaped from the glume. Suppose a cross is intended to be consummated between the Genessee flint as male, and white Blue stem as female. Then on a dry and warm day—this state of weather seems to be necessary, as at such times impregnation not only more readily takes place, but appears to be more successful—between ten and twelve o'clock, hold the head of the blue stem downwards and carefully open the glume, then with a very sharp, pointed scissors cut off the anthers and let them fall to the ground. Great care must be taken that no anther is permitted to touch the pistil of the same head, either before or after separation of the filaments. This is perhaps the most delicate part of the operation.

After the anthers have been removed, pollen grains from the anthers of the Genessee flint must immediately be applied to the pistil of the glumes from which the anthers have been removed. In order to preserve the heads thus impregnated from injury by insects or birds, they may be enveloped in a hood of gauze or Swiss muslin, but no caution whatever is necessary to guard against the accidental introduction of pollen grains. I have brought forward these suggestions and hope some one will experiment on raising new varieties of wheat and report the result to the Society.

L. S. R.

**SLOVENLY FARMING.**

The farmers of Lancaster county are often referred to as models in the art of husbandry, and so they are, compared with the generality of farmers of some sections of this and other states.

We are, however, satisfied from years of close observation, that there are not a dozen farmers in this county, who have carried their system to such perfection, as not to be susceptible of decided improvement.

Quite a number may be considered thrifty, energetic, enterprising farmers, compared with their ancestors, but are by no means advancing with the age in which they live.

The largest number, however, may safely be classed under our title at the head of this article.

In order to substantiate our assertion in the face of the prevailing contrary opinion, we would like to see, 1st a candid report from all the millers in our county, as to the percentage of wheat sold that is entirely pure. 2d. What number there are who do not grow, or suffer to grow, a large quantity of useless weeds, where something might grow as well, which would be of value to both producer and consumer. 3d. How many persons there are, whose stock, (cattle in particular,) is in as good flesh in the spring as in autumn, and how few whose stock is turned out in the spring simply walking skeletons, to build up during the summer what it had lost during the winter? 4th. What proportion of them turn the fertilizing materials on their farms to good account, or who allow none to waste? 5th. How many there are, who keep their farm implements under cover when not in use? 6th. What proportion of fruit trees planted that go to ruin from neglect?

There are many other questions that might be put, that are quite essential in farm management, but if the above were fairly answered, it would no doubt cause many to open their eyes and wonder why all this blowing about Lancaster county farming. But if a true exhibit of our county should fall so far below the general estimate, a report from other sections of our state and county would not be at all flattering.

If the unnecessarily, wasted energies, and appliances of means to ends, were always properly directed and applied, the large number of disappointed and discouraged tillers of the ground all over the country, would rapidly grow less, our agricultural districts would exhibit a brighter aspect, and the vast area of our country might ere long be teeming with additional millions of happy, contented, and prosperous cultivators of the soil.

H. M. E.

**EXPERIMENTAL FARM.**

We have had the pleasure of attending a meeting of the managers of the Experimental Farm, of Eastern Pennsylvania, held June 10th. The attendance was quite good considering the day, which was so rainy as to prevent even a general view of what was to be seen; yet sufficient could be seen to show that there is order and system in its management.

The Farm is located near West Grove, Chester county. The land is sufficiently rolling with a variety of soil and excellent running water, so as to make it well adapted to the above named purpose.

With such an active and efficient superintendent as Thomas Harvey, (the present superintendent,) the agricultural and horticultural public may look forward with flattering hopes, for the results of very valuable experiments, provided, the means will be furnished him to carry out the plans laid down by him and the board of managers.

It is therefore to be hoped that every farmer and fruit grower, (in Eastern Pennsylvania at least,) will make an effort to sustain and develop this Experimental Farm to its fullest capacity.

The time has arrived, when experimental farms should and must be sustained, for, under the present system of agriculture and its uncertainties, it will not pay for each farmer to be an experimenter to any great extent, while a comparatively small contribution will furnish him with the data and results of a thorough system of experiments.

This institution is, however, in its infancy and will require the fostering care of its friends for some time to come, to which the people of Chester county seem to be wide awake; an evidence of which, was the large gathering of both ladies and gentlemen, at the meeting on the 10th ult. Among those present was Thomas Meehan, editor of the *Gardener's Monthly*.

The counties of Delaware, Bucks, Montgomery, and Lancaster, were also represented, the latter principally by members of our Agricultural and Horticultural Society, in the persons of L. S. and P. S. Reist, J. and E. Brackbill, J. and H. Landis and others.

The next meeting will be held Thursday, Aug. 19th, when there will be a trial of plows, which may be interesting to our farmers, as there will be no horse-racing in connection with it.

H. M. E.

THE peach crop of Maryland, except in a few locations, is said not to have been seriously injured by the late frosts.



## SMUT.

The disease so named is one of the most deleterious which affects the wheat crop. It manifests itself by the enclosure of the grains of wheat in a fetid black powder within the husks of the wheat head. This powder, when viewed through the microscope, is perceived to be a collection of small seeds which adhere to the wheat when all are threshed together. This disease is sometimes confused with mildew or rust, but it is entirely a different disease, and readily distinguishable the one from the other when their main characteristics be known. It is commonly the grain of the wheat that is invaded by the smut, but sometimes the leaves and stems of the plant are liable to it. Besides wheat, oats barley and maize are likewise liable to this disease. The disease is engendered by the absorption of these minute seeds (which the microscope has displayed) into the roots of the plant where they germinate, and use the plant and its entire organization for the production of their own seeds. The plant thus affected is unable to grow, as a consequence, as large as a healthful one, and it exhibits a dark green appearance from the blackened sap within. It is said that heads have been found containing some good grains and some smutted ones, but it is exceedingly doubtful if this be the fact. If any of the grains should seem to escape it may be considered as certain that they will be very weak and small.

Smut is disastrous to the farmer in proportion to the number of heads attacked by the disease. Fields have been seen in which one-fourth, one-half and even two-thirds of the heads of grain have been diseased. All heads growing from the same root are sure to be smutted. This disease is developed in a dry as well as in a rainy season, and in a dry as well as in a moist soil. It has been discovered, however, to generally make the greatest ravages in soil not over fertile, or on such as had the preceding year produced a *gramine* affected by smut. In the first instance the vegetative life being weak, the mushroom met with less resistance in its development; and in the second, the ground having retained the spores of the mushroom of the preceding year, it already contained the elements of the malady.

The remedy for this disease would then seem to be, 1st, the getting rid of the spores which may be attached to the grain or seed; 2d, never to sow grain upon any kind of cereal stubble which had been affected by smut. The means by which the seed may be freed from the infectious spores of smut, is to soak it in various washes, amongst which may be mentioned dissolved bluestone and then mixing the still wetted wheat with quicklime. It should be soaked one night in the

dissolved bluestone. Another remedy is to use salt instead of bluestone, soaking it for some time and following the soaking with the same application of quicklime. The soaking destroys the vitality of the smut seeds.

The following plan for the preparation of wheat seed accredited by the *Cincinnati Gazette*, to R. G. Carmichael, may perhaps be of interest to our farming community:

*"To Prevent Smut in Wheat.*—Dissolve half a pound of sulphate of copper in three quarts of warm water. After the mixture has cooled, sprinkle it over two bushels of wheat, stirring it through until the whole be wet. Put it up on a heap, turning it occasionally for an hour, when it will be ready for sowing. Should wet weather or any other cause prevent its being sown immediately, spread it thin on a dry floor, giving it an occasional turning, and it will not suffer injury for weeks."

Other remedies might be given but the space of an article such as we design this forbids further amplification.

A. H.

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## Horticultural.

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### HORTICULTURE AS OLD AS THE BIBLE.

"And God said, behold I have given you every herb bearing seed which is upon the face of the earth, and every tree in which is the fruit of a tree yielding seed, to you it shall be for meat, and to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth wherein there is life, I have given every green herb for meat, and it was so. And God saw everything that he had made, and behold it was very good, &c."

"And the Lord God planted a garden eastward in Eden, and there he put the man whom he had formed. And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food, and the tree of life also in the midst of the garden, and the tree of knowledge of good and evil, &c."

"And the Lord God took the man and put him in the garden of Eden to dress it and to keep it," (as though God intended him to be a horticulturist.) "And the Lord God commanded the man, saying, of every tree of the garden thou mayest freely eat, but of the tree of knowledge of good and evil, thou shalt not eat of it, &c."

But mark the dreadful consequence of disobedience to God, see what sin has brought into the world. "And unto Adam he said, because thou hast eaten of the tree of which I commanded thee saying, thou shalt not eat of it, cursed is the ground for thy sake, in sorrow shalt thou eat of



it all the days of thy life, thorns also and thistles shall it bring forth to thee, and thou shalt eat the herb of the field, in the sweat of thy face shalt eat bread till thou return unto the ground, &c."

"Therefore the Lord God sent him forth from the garden of Eden to till the ground from whence he was taken, &c."

We have Scripture as a foundation for our society, but that does not prove that we are perfectly right. We don't mean to say we are right when we are so far from it. But although mankind (and perhaps our fruits also,) have degenerated from that pure state in which they were created when God saw that they were very good; yet we rejoice to know that there is still a way, and the means whereby we can be reclaimed and brought back into peace and favor with God, and we believe also, that our fruits can be greatly improved and brought back from their degenerated state, into a better and more perfect condition.—In fact there has already been great improvements, but perhaps we are not progressing as fast as we might or should, either in morals or fruit culture. What are the signs of the times? We call this God's country. Very well, so it ought to be. But I fear we have gone away from God, and robbed God of the honor due to his name. Does not this seem to be the reason that Providence is somewhat against us, and we do not prosper in our efforts as well as we might? Now God commands us to return unto him and he will return unto us; will we begin to say, wherein shall we return, or wherein have we robbed God? Why is it, that with all our inventions, and remedies, and insect exterminators, &c., we are still cursed with a curse? I firmly believe it is, because we have robbed God; even this whole nation has robbed Him.

"Bring ye all the tithes into the storehouse that there may be meat in my house, and prove me now herewith, saith the Lord of hosts, if I will not open you the windows of heaven, and pour you out a blessing, that there shall not be room enough to receive it, and I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground, neither shall your vine cast her fruit before the time in the field, saith the Lord of hosts. And all nations shall call you blessed, for ye shall be a delightful land, saith the Lord of hosts, &c."

"That our sons may be as plants grown up in their youth; that our daughters may be as corner stones polished after the similitude of a palace; that our garners may be full, affording all manner of store; that our sheep may bring forth thousands and tens of thousands in our streets; that our oxen may be strong to labor; that there be

no breaking nor going out; that there be no complaining in our streets. Happy is that people, whose God is the Lord."

J. B. E., Beaver Valley.

### THE GRAPE.

Grape growing, in our country, is so much in its infancy, that experience more than all else is wanted to lead us to better results. Most of the popular varieties of the grape are of recent origin; some of very recent origin, and but few have been well tested over a wide range of country.

What variety does best in one section; what in another; what requires a deep soil, what a shallow one? these are questions of importance.

My first planting was done in deeply trenched ground. The soil is clay, a little mixed with fine slate, and is situated at the foot of a slate ridge which shelters the spot from the northwest wind. Of many kinds planted in this ground only four were successful, viz: the Hartford Prolific, Clinton, Martha, and Telegraph. Of Concord, I had only one vine planted; it fruited only twice and grew less every year afterwards, until it died. Isabella and Catawba did well for some time, but their day is past. Of the later and newer varieties, the Delaware ripened a few small crops, and then did no more good. Its leaves scorched in midsummer, and the grapes remained unripened. Diana ripened a few crops and then became worthless. Anna never ripened a perfect berry; it constantly fell a prey to mildew. Cassidy did not ripen well; it also mildewed. Alvey did not bear well, nor was the fruit of good quality. Of Rodgers' hybrids, I have numbers 1, 9, 15, 19 and 33. They all mildewed, and some of them rot badly. Nos. 1 and 9 have done the best. No. 15 has done the worst of them all. Creveling does not ripen its fruit because it mildews very badly. Union Village also mildews and is not hardy, besides being of a poor quality. Cayahoga in five years did not come to fruiting, and besides this barrenness, also mildews. Iowa and Adirondac are five years old; the vines are now about one-fourth of an inch in diameter and have never shown any fruit. This year, however, the Adirondac shows some flower stems. Maxatawny did well for a few years; particularly a vine that was grafted on a Franklin stock, which grew more vigorously than the rest and fruited better. Both bunches and berries were larger on this vine than on the others of this variety, but mildew also overcame it at last, and they were all carted off the ground together. Taylor proved a rampant grower, free from mildew, but a poor bearer. Franklin did not bear well on this trenched

ground, but on the slate hill which was not trenched it is an enormous bearer, and the fruit is of very good quality. Allen's Hybrid, Clara and Rebecca turned out worthless. Of Salem, I have a small plant which mildewed last season, and this season, up to this time (May 10) shows no signs of life. Weehawken made a strong growth last summer, but mildewed somewhat and did not ripen half its wood; this spring it grows feebly. The Hartford Prolific I have found one of the most hardy and reliable of all grapes. It is a good bearer, and frost always finds it with a healthy and perfect set of leaves. The Clinton bears enormously; its leaves have not proved as healthy as those of the Hartford, but sufficiently so to ripen its fruit well. Telegraph fruited last season for the first time and is a very promising grape. The Martha I received from my friend, Mr. Samuel Miller, (who is the originator of that variety) in the fall of 1863. My plant was feeble and made very little growth the first season. It fruited the first time in 1856, bearing a few small bunches of very good quality. In 1867 it had quite a large number of bunches of fair size; but the excessive wet weather of that summer caused some of the berries to rot and the bunches to become small. What remained ripened well and were very excellent in quality. Almost all my other grapes rotted that season—Hartford and Clinton being the exceptions. In 1868, which was also a wet season, a few of the Martha berries rotted, but not enough to much lessen the crop, while Rodger's Hybrids, fifteen feet distant, rotted much more. My Martha vine was weakened by continued and excessive layering. Young Martha vines thence procured and now planted two years, are very thrifty and show a growth equal to Concord under favorable circumstances. In size, the leaves are a little smaller than the Concord's, and of a paler green. These young plants so far have been as hardy and as free from mildew as any Concord. The old vine, now six years old, in all that time, has shown no mildew on its leaves. It is *apropos* to mention here that I have made inquiry of those of my acquaintances who have fruited Martha vines, and am told by all that they have not seen any of the fruit rot. My vine is the only one on which any rot had appeared, and may not the trenched ground be to blame for it? In quality, the Martha is rich and sweet, and very tender, with very little pulp and no unpleasant acidity near the seeds. It has a slight touch of the native foxy aroma. Its skin is thin, the color, yellowish green, with a thin white bloom. Persons who have tested grapes from my vine pronounce it equal or superior to the Delaware. With me it has proved worth more

than all of the other white grapes, so far known to me, put together.

My newer plantation of grape vines is on the slope of the slate hill (inclining southward) of which I spoke at the commencement of this paper. The ground here is not trenched, and the vines look more promising than on the trenched ground. My Concord's here are all I could wish for. The Clinton's are also very good, and the Franklin surpasses anything I ever saw elsewhere of that variety. The Hartford Prolific also does well here. In this ground I have planted 400 Concord and 160 Martha vines, together with 100 plants of other varieties.

Litiz, May 10, 1868.

I. H.

[From the foregoing the conclusion may be drawn that, except for a few varieties, trenched ground is not so congenial to the grape, in a soil like that of Mr. H.'s, as is ground prepared in the common way. It seems that both mildew and rot are fostered by a soil over deep and over rich—a very important lesson if verified by further observation.—Ed.]

#### WHEN TO CUT TIMBER TO MAKE IT LASTING.

In looking over the proceedings of a late Agricultural meeting, I was reported to say that I cut black-oak wood in winter, or December, that was sound after ten years exposure. That was a mistake. I cut black-oak trees in May, 1859, and took the bark off up to the top limbs, which were intended for fire wood, and some of it with the bark off was exposed for 9 years, and still sound. Any timber to be used for fence rails will last longer when cut in the spring, when the bark comes off freely. I have willow rails on my farm cut 45 years ago and still sound. Fence posts, when they are well seasoned, will last much longer than posts set in the ground green. A remarkable case came within my experience in the cutting of swamp oak, in February, for fence posts. I set the posts in the ground in the following April, and they all rotted through, above ground, in eight years.

L. S. R.

#### PRUNING TREES.

February is generally considered the time to prune fruit trees, when much pruning is necessary; but much pruning at one time is often more injury than benefit, like too much bleeding as was formerly resorted to for health, which is now rarely performed. A neighbor of mine, who is a considerable Pomologist, does all his pruning during the summer, and very little at one time. In the spring he generally cuts his

trees back more or less, which insures a more vigorous growth and he uses the knife all summer to his trees to work them in a beautiful shape; his peach trees are low and spreading, making a handsome appearance. I know of instances where whole orchards were ruined by too much pruning at one time. L. S. R.

## Botany.

### WEEDS, NO. 4.

#### THE THORN APPLE.

This coarse, unsightly, fetid weed, is an annual plant, which seems to follow the progress of cultivation, and is rarely found remote from the vicinity of dwellings. It occurs in every part of the Atlantic coast from Maine to Florida, and in the neighborhood of settlements in the Western States. It usually grows along road sides, among rubbish and in neglected spots of rich ground, and is a well-known poisonous, medicinal, coarse herb, stem stout, much forked or branching; leaves coarsely toothed, with white or bluish purple, funnel-shaped, folded flowers, succeeded by a prickly, four-valved fruit, containing many black seeds. The genuine botanical name is "Datura," from the Arabic "Tatula," and the specific name "stramonium," is from the Greek, signifying "Mad Apple." Its native country is doubtful. Gerarde gave the first satisfactory account of it on record, who published a description and figure in 1597, raised from seeds by himself that came from Constantinople.

Notwithstanding, in Miller's Dictionary by Martyn, the editor (like most European writers) says, "That it is a native of America, we have the most undoubted proofs, for in the earth brought with plants from various parts of that extensive country, we are sure to have the thorn apple come up. Allow me to quote the original statement of Gerarde in his herbal of 1597, referred to; he says—

"The inyce of thorne apples, boiled with hog's grease to the forme of an ungent or salve, cureth all inflammations whatsoever, all manner of burnings or scaldings, and that in very short time, as myself have found by my dayly practise, to my great credit and profit."

Stick a pin here; old as the news is, it is not far from the truth, and much more modern authority could be quoted to the same end. It is not my object to introduce this plant to the notice of the public for its various reputed medicinal properties, nor the many stories that have been related of the power of this and other species of *Datura* to produce mental alienation without at the same

time materially affecting the body. It is a fact—that the Royal Society of London, gravely inquired of Sir Philberto Vernatti, "whether the Indians can so prepare the stupifying herb *Datura*, that they make it lie several days, months, or years, according as they will have it, in a man's body; and at the end kill him without missing half an hour's time," such was the superstition respecting this plant.

It is, however, a well-established fact, that it is dangerous to have it grow within the reach of children, who may be tempted to pluck the flowers and suck the open tubular bells, as they do Honey suckle or clover heads. I know of one case where the parents were much alarmed at the frantic actions of the children who had indulged sucking the juices. Dr. J. L. Ziegler, of Mount Joy, was called on that occasion, other facts of the like have come to my knowledge. The name "Jimson" Weed, is a corruption from Jamestown Weed, in connection with the above I will quote a passage from *Beverly's History of Virginia*, p. 121.

"The Jamestown Weed, (which resembles the thorny apple of Peru, and I take it to be the plant so called,) is supposed to be one of the greatest coolers in the world. This being an early plant, was gathered very young for a boiled sallad, by some of the soldiers sent thither to quell the rebellion of Bacon; and some of them ate plentifully of it, the effect of which was a very pleasant comedy, for they turned natural fools upon it for several days. One would blow up a feather in the air, another would dart straws at it with much fury; another stark naked was sitting up in a corner like a monkey, grinning and making mows at them; a fourth would kiss and paw his companions, and sneer in their faces with a countenance more antic than a Dutch doll.

In this frantic condition they were confined, lest, in their own folly, they should destroy themselves. A thousand simple tricks they played, and after eleven days returned to themselves again, not remembering anything that had passed."

In the Language of Flowers, this is emblematic of "*Deceitful Charms*," too often enervated by luxurious ease, and indolent beauty languishes the whole day, and avoids the cheering rays of the sun. At night, arrayed with all the coquetry, she exhibits herself to her admirers. The unsteady and delusive light of tapers, aiding her artifices, lends her a deceptive brilliancy, and she enchants by charms that are not her own. Her heart, meanwhile, is a stranger to love; all that she wants is slaves and victims. Imprudent youth, flee from the approach of this enchantress.

The flowers of the thorne-apple, like those nocturnal beauties, drop while the sun shines beneath their dull-looking foliage; but, on the approach of night, they revive, display their charms,

and unfold their ivory bells, which nature has lined with purple, and to which she has given an odour that attracts and intoxicates, stupifying snout insects that inhale it. The Night-Hawk moth, bred from the tobacco worm and its kindred species are the only visitors of this plant to sip its juices, fitting associates. The busy bee avoid it, as deleterious, unless it is an out cast from the hive. Flowers may impart a lesson; they do well who heed it.

J. S.

### NOTE ON THE CULTURE OF SAFFRON IN PENNSYLVANIA.

BY CHARLES A. HEINITSH.

*Crocus Sativus*.—Saffron, until the last few years, was cultivated in Lancaster county, Pa., to a considerable extent, particularly amongst the German portion of its inhabitants, for its use as a flavoring and coloring ingredient in soups and tea, and as a domestic remedy for measles and other febrile diseases, besides making an ornamental flower-bed in their gardens.

Saffron requires a rich soil to grow it abundantly. The usual mode of cultivating it is to prepare the bed by digging deep and filling up with manure and rich soil, planting the corms or bulbs, after separating the young from the parent,\* about eight inches apart in rows, similar to onion sets,) in the month of August. Care is necessary to keep the beds free from weeds.

The flowering season commences about the middle of September, and continues until the beginning of October, according to the locality of the bed. The flowers are picked off early in the morning; the stigmas separated and dried in the shade. This continues every day until the season ends. The leaves remain green all winter. The following June the beds are cleansed from the decayed leaves, and left until renewing time in August.

Saffron must necessarily be dear, says Mr. Bentley in an article on adulterations published in last May's number of Journal of Pharmacy, because it takes a great number of flowers to make a pound; and there are other causes, viz., failure of crops from excessive rains or drought, and attacks of the field mice, which destroy the bulbs. But withal, when we remember that all our products of the garden and farm are liable to failures from various causes, though probably not to such an extent, I think it can be profitably raised, judging from the following two calculations, taken as an average:—On inquiry from some of the growers, one informed me that about 3,000

flowers, or 9,000 stigmas, can be raised off a bed 12x6 feet=72 square feet. Another, that often in a good season between 2,000 and 3,000 flowers can be had in one morning's picking off about 500 square feet, and this continues for a number of mornings, though not always with so large a number. These two make about the average result of experienced growers.

In counting and weighing the stigmas, I find, after several trials, that 300 weigh 13 to 14 grains, which would be a yield of about 420 grains to 72 square feet, or 33 to 36 pounds to an acre. If these calculations only approximate to correctness, at present prices it will be very remunerative to the grower in comparison with many other products.

Specimens of the stigmas and corms are submitted.

Lancaster, Pa. —Proc. Amer. Phar. As. 1866.

## Bee Culture.

### BEE CULTURE.

Previous to the clearing of our forests, bee-keeping proved a profitable business to many people, especially to those that had an inclination and fondness for this kind of pursuit. It was generally attended with little more expense than the cost of a few boards and straw hives. So well did persons in former times succeed with the culture of bees that hives of them were destroyed in the fall for the honey which they had gathered during the season.

Now, however, since our forests have been so greatly thinned, and the wild flowers have become so scarce, bee-keeping, according to the old style of culture, has ceased to be profitable, and most farmers have given up the raising of bees with disgust as a business altogether unprofitable.

About twenty-five years ago several enterprising men, some of them Europeans and others Americans (of whom Longstreth, of Ohio, Dr. Berg, of Philadelphia, and Saml. Wagner, of York Pa., deserve especial mention,) undertook to develop plans by which the old systems of bee culture should be dispensed with. These gentlemen have devised new systems of bee culture, and have made the business again one of profit. It has been discovered through the ingenuity of these enterprising men that now, since so many peach and apple orchards are planted by our farmers and flowers are grown in abundance by the ladies, bees may find sufficient scope again upon which they can forage and gather their honey in great quantities.

\* The young corms or offshoots are attached similar to colchicum.

I would call special attention to those known as the Kidder and Longstreth hives as being the best within the range of my knowledge. These hives are admirably arranged with slats, frames and glass, so that a young swarm can be put in and examined at all times; a part or all of the bees removed and transferred to a new hive and furnished (if queenless) with a young queen, or the whole hive may in a short time be changed from black to Italian bees. In my remarks at this time I will confine myself to a few facts leaving further explanation for a future article.

To my limited apiary, in 1868, I added four Italian swarms which I obtained of W. J. Davis, of Youngsville, Pa. These I forced to swarm, or rather divided them, and then again they, to my surprise and against my inclination, swarmed four times. This so weakened them that I lost several of them before I moved them from their summer stand to a dry cellar for winter. By careful attention, however, I succeeded in placing what was left, in tolerably good condition, on the summer stand again. These seem to flourish well, having swarmed the first time on the 8th of May, and have now swarmed in all six times when I pen this article.

Anticipating the continuance of this subject in some future number of the LANCASTER FARMER, I in the meantime would refer all apiarians and those desirous of information on this subject to the *American Bee Journal*, and to the *Bee Keeper's Journal*.

I believe, in conclusion, the keeping of bees might be made quite a profitable business if our farmers could be induced to turn their attention to it. We have instances of swarms doubling, and each producing from twenty to forty pounds of honey in a season. Honey itself in the farmer's family is a valuable addition to the table, and now in these times, when molasses and sugar are both so high, why might not our farmers supply themselves with this most useful and palatable article of diet.

PETER S. REIST.

## Entomological.

### PEA-BUGS AND BEAN-BUGS.

The infestation of peas by a small coleopterous insect, (*Bruchus pisi*), commonly called pea-bugs, is a familiar occurrence, no doubt, to all our readers, but it is not so common to find beans similarly infested; indeed, we do not remember to have seen them before the present season.—Mrs. P. E. Gibbons, brought us a lot of beans a few days ago, containing hundreds of them. In

peas we usually find but a single insect in a seed—on rather rare occasions two may be found—but in these beans some of the seeds contained a half dozen or more. These, on examination and comparison, we find to be *Bruchus minus*? or nearly allied to it. They belong to the great family CURCULIONIDÆ, the very name of which, is associated with a sort of terror to the fruit grower and gardener. Many of the peas infested will nevertheless germinate and grow, but we cannot tell what the effect would be on beans, for some seemed so perfectly riddled by the perforations of the insect, that there does not seem to be sufficient of the inner substance left to support their germination. There may, however, be some in which the germ is not effected. Whatsoever remedy may have been applied to the destruction of the pea-bug, no doubt, would also apply to these.

## Editorial.

### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Agricultural and Horticultural Society of Lancaster county, held its regular monthly meeting, in the Orphan's Court room, in the city of Lancaster, on Monday, June 7th, Henry M. Engle, President, and Alex. Harris, Secretary. The minutes of the previous meeting were read and approved without dissent. The chairman then rose and suggested, that as a considerable quantity of business would likely be transacted at the meeting, he hoped the members would do all in their power to aid him in having the business conducted in strict accordance with the rules of the Society and parliamentary usage. Levi S. Reist, chairman of the committee on fruits, reported verbally that the fruit this season promised unusually well; apples looked better than they have done for years; peaches seemed to promise a finer crop than they have done for ten years; pears are not so promising as in some former years; strawberries and blackberries looked exceedingly fine and gave evidence of a very large crop. The other chairmen of the several standing committee were called by the President, but had nothing special to report.

Dr. Sam'l Welchans, from the committee having charge of the strawberry exhibition, reported that the committee had held a meeting, but having arrived at no definite conclusion as to the time of holding the exhibition, preferred to refer the matter back to the Society. The report of the committee was on motion received. Dr. Welchans moved to hold the exhibition on the 10th

of June. Several members discussed the subject of the motion at considerable length, when J. G. Rush offered an amendment that the exhibition be held on the 14th instead of the 10th, which was adopted. The previously appointed committee was by direction of the Society continued, and directed to make the requisite preparations for holding the exhibition.

S. S. Rathvon now proceeded to read an essay prepared by Jacob Stauffer, on Weeds.

J. Q. Taggart and B. C. Kready, Esq., were proposed and elected members of the Society.

The following question was handed to the Secretary to be read, and answered by any member of the Society, in accordance with its rules. "What remedy can be suggested by any member of the Horticultural Society, as a cure for the *gapes* in chickens?"

Peter S. Reist in answer to the question proposed, remarked that he believed that the removal of the worms from the throats of the chickens would cure the disease. Several members now remarked that by doubling a horse hair and inserting it so doubled in the open mouth of the chicken and drawing it out, will sometimes extract as much as a dozen worms. This they gave as a remedy for the disease. Levi S. Reist, thought the chickens kept away from the henery are not so liable to this disease as those kept amongst the flock. J. H. Brackbill said, that by keeping chickens out of the rain and wet grass, has been sufficient in his experience to prevent the disease. S. N. Warfel differed with J. H. Brackbill as to the virtue of keeping the chickens out of the rain and wet grass, and does not believe that the *gapes* are so cured. Heretofore, he has had no faith in the removal of worms by means of the horse hair mentioned by the members. He always regarded it as an old woman idea.

Dr. Saml Welchans now proceeded to read an essay upon vegetable physiology.

The Secretary, by direction of the Chair read a letter from W. L. Brinton, secretary of the Board of Managers of the Experimental Farm, in Chester county, inviting the Lancaster County Agricultural and Horticultural Society to send a delegate to represent the Society at the meeting of the Board of Managers, at the said Experimental Farm, on Thursday the 10th of June.

On motion the Society went into an election for a delegate for one year, which resulted in the choice of Henry M. Engle. The said delegate was on motion authorized to appoint a substitute in case, he could not any time during the year, attend the meetings, at which he was authorized to represent the Society.

A fine display of fruits was on exhibition at the meeting, viz: Henry M. Engle, had a variety of seedling strawberries of a very large and fine appearance.

J. B. Erb, had some of the Early Rose potatoes fully half grown. He also had on exhibition strawberries; the Wilson, Early Scarlet, Early Red and Hautboy.

Peter Reiley had Triumph de Gand and Philadelphia.

Daniel Smeach had Agriculturist, Wilson and Triumph de Gand.

John G. Rush had several branches of different kinds of trees, the leaves of which were infected with insects and which were referred to the Entomologist.

Hon. J. Zimmerman exhibited a very handsome seedling verberna.

After the transaction of the current business the members of the Society, by allowance of the Chair, were permitted to indulge themselves in social relaxation and in the free testing of the fruits on exhibition, (always an agreeable part of the proceedings,) upon the conclusion of which, the society, on motion, adjourned.

#### A GENEROUS YIELD.

Mr. Daniel Smeach, of this city, had a "small patch" of strawberries the present season, which we think produced not only a generous but a paying crop. The enclosure was just thirty feet wide and one hundred and fifty long, or what is generally called "half a lot." From this patch he gathered twenty-three bushels of marketable berries, and then threw it open to his poor neighbors, who gathered many more. The greater part were of "Wilson's Albany Seedling," and the remainder, the "Agriculturist," and "Russel's Prolific." The aggregate number of quarts sold was seven hundred and thirty-six, and the average price 18 cents per quart, showing a money value of \$130.48. We saw some of Mr. S's Agriculturists, that when first pulled, measured two and one-half inches in their largest diameters. We should take great pleasure in recording the results, in strawberry culture, of any of our patrons who will take the trouble of furnishing us the necessary data. Some cultivators indulge apprehensions that the market may become glutted, and that consequently the business may not ultimately pay, but there are no just foundations for such apprehensions. The demand is every year increasing, and strawberries will after awhile be regarded rather as a necessity than as a luxury. If matters could be so arranged as to get them very early into market, and also very late, so that their season would be prolonged, there would be little



danger of depreciation from an overstocked market. The chief danger lies in a simultaneous ripening, and a short season, when the crop is abundant. The best and largest berries, the present season, brought from 25 to 30 cents a quart; medium qualities were sold at from 15 to 20 cents, and only a few very inferior ones at 10 cents. On a visit to New York, a few days ago, we found the stock in market very limited and the quality inferior, indeed the New York papers state that, on the whole, the strawberry crop there the present season was a failure. In some particular instances it may have been so here, but not, we think, as a whole, although we may not be able to say it was *very abundant*.

WE call the attention of our farmers and gardeners to an article in the present number of our Journal, on the subject of *Saffron*, and its culture, which was read before the "American Pharmaceutical Society," at its annual meeting in Detroit, in 1866. The article, as will be seen, is taken from the proceedings of said society, and was written by Mr. Chas. A. Heinitsh, of this city, and has been copied into a number of home and foreign scientific and agricultural publications. We reproduce it for the benefit of any of the cultivators of our county who may desire to engage in the production of a plant that will be sure to remunerate them for their labor. Mr. H. informs us that he himself will give \$1600 for one hundred pounds of pure American saffron. Saffron, it appears, has been growing scarcer every year, and still the demand for it continues, and especially for the home article, which seems to be preferable to the foreign. It is true that the demand must necessarily be limited, but, no doubt, two or three hundred pounds might be sold in the county of Lancaster every year. This would at least produce pin-money for a number of the housewives and maidens of our county, who might easily add a bed of saffron to the other objects of their garden culture. It is a plant that would yield bountifully to the gentle manipulations of a female hand. The uses of saffron are various, among which are seasonings for teas and soups, and coloring for bitters, wines, &c., as well as medicinally.

THROUGH some unaccountable neglect, at the exhibition of the Society, held on the 14th of June last, no committees were appointed to report on the kind and quality of the fruit and flowers, and therefore no detailed notice can now be taken of them other than that which appears in the reports made to the daily papers. This is to be regretted, for not only the kind and quality

of the fruit, but also the cultivators' names and the mode of cultivation, together with the locality and the nature of the soils, should have become the subjects of a committee's consideration.

We can, however, safely say that we have never before seen an exhibition that contained so fine a display of strawberries, or so many large and luscious varieties, in proportion to the quantity on exhibition. Those of Peter Riley, Daniel Smeach, John Shields, J. G. Rush, Samuel Burns, John Erb, and H. M. Engle, were particularly fine. There may have been others which we cannot just now call to mind, and therefore we can only refer our readers to the columns of the *Intelligencer* and *Express*, where the reports on them, and also the many beautiful flowers on exhibition, appeared. We hope on future occasions this matter will receive proper attention. Indeed, the Society should previously appoint committees to examine and make up their reports, before the doors are opened to the public on the exhibition day.

WE clip the following item from the Lancaster *Intelligencer*, of a late date, which contained a brief sketch of the proceedings of the Board of Managers of the Experimental Farm, at West Grove, Chester county, on the 10th of June, 1869. H. M. Engle, Esq., was the duly accredited delegate and representative of the Lancaster County Agricultural and Horticultural Society. Mr. Engle, of Lancaster county, exhibited some very fine specimens of hybrid and seedling strawberries. The Chair appointed Thomas Meehan, (editor of the *Gardener's Monthly*), and Joseph T. Phillips a committee to examine the strawberries, who made the following report:

"The committee appointed by the annual meeting of the Board of Managers of the Eastern Experimental Farm to report on some seedling strawberries exhibited before them by Mr. Henry M. Engle, respectfully report, that some of them are berries of the largest size and highest flavor, equal to the best now out, and that if they shall prove productive and hardy will prove valuable additions to our list of varieties."

WE have received a well-written and interesting communication from Mr. Henry Bower, the inventor and owner of "Bower's Complete Manure," which we will lay before our readers in the next number of our Journal; because we think it contains matter of interest to the farming public, and also because the author seems to think that our editorial notes, in the two last numbers of our paper, on the comparative results of fertilizers, in the report of the Superintendent of the Experimental Farm at West Grove, may have a

tendency to prejudice the sale of his manure; a result which was the very farthest from our intention. The paper alluded to seems to be a very carefully and impartially collated statement of the effects of the leading fertilizers now in use; but if, in publishing it, it may seem to be unjustly partial, we will not assume the responsibility of answering any cavils upon the subject. The paper, to our mind, is of particular pecuniary value, inasmuch as all the results are carried out also in dollars and cents.

## Miscellaneous.

### OLD WATERMAN'S JOURNAL.

"Good morning, Mr. Waterman, I thought I would step over and see what a reviving effect this spring weather has upon you."

"Good mornin an' thankee, Mr. Fisk, your nighest the very man I want to see. I was jist a huntin up that pen you gave me afore you quit the town business. You see, it happened this way, I was up in Lancaster about that check I was a tellin you of—well, I met one of them chaps that edits the FARMER. Glad to see you, says he, you must go right along to the meetin, and furthermore, we must have some of Old Waterman's doins an' sayins. Well, I kinder promised, but I told him his sayins are purty plain talk, an' he can't write very proper—wise—that's all right, says he."

"And so, says I, nothing would gratify me more truly than that your practical experience should become embodied in the pages of the FARMER, (he has city larnin, Mr. Editor) and as I want to put in my potatoes to-morrow, I thought I would ask to see your plot over there and learn your mode."

"Sartinly, Mr. Fisk, I'll jist tell the boys to dig in them broke bones to the grape stalks an' fill up the mulch boxes, an' I'm ready."

Now, you see, I can't afford to plant pertatoes in sod ground, keep that for corn, nighest the best general crop a farmer can raise; grain and fodder both, you see, but in stock ground in place of oats, an' anyway they are a bad crop in good ground, fur in a flush season they drop an' cost too much to barn 'em. Now you see the stalks on this four acre patch was all a hauled off last of last November, into the dry yard at the barn, then manured an' plowed for winter freezin, then jist cross plowed deep this spring an' got in good order, an, now here's the pint, Mr. Fisk, you see them furrows were made with a ridgin plow. A shovel plow 'll do if you go twice through, so the ridges are ten inches high, drop an' take all but

two hind teeth out of a hoe harrow, make narrow to suit and kiver."

"Well really that looks like burying them to keep."

"Hold on, Mr. Fisk, don't you know if you keep kiverin the tender plant, the pertato will be on the top. Don't you know the weeds 'll always beat—then jist afore the pertato's through, drag a tooth harrow lengthwise, an' conker, then wait till they are up a half an' inch or so, an' drag crosswise an' conker agin, hoe-harrow two or three times an' your'e done without a touch of the hoe. You want to know about that meetin'. Well, you see I took a back seat an' purty soon the meetin' begun—seemed to go on regelar principles. Some said so, an' some said it another way. One science man was a readin about birds, callen 'em hard names. Said he was often a sufferin' from his neighbugs. I jist thought, why don't he touch 'em with a little science an' fix em. Another said he had a patent panacea to destroy fruit insect, or drive 'em away, an' he would tell the meetin' when the fruit time was a comin'. I tell you, Waterman reads them chapters very slowly, least-wise he is unwillin' in the spirit an' weak in the flesh."

Excuse me, my friend, but I cannot help thinking "*damnant quod non intelligunt*," for really it may be a valuable discovery; at least wait until this mountain has brought forth its mouse and see what a big house they will build for it, and what a big bell they will put on this Stone—or brick house.

J. H. BRACKBILL.

BRAN FOR MILCH COWS.—One of our best dairymen in this section relies mainly on bran as feed for his cows, and finds it produces the most milk. He gives them as much as they will eat, and wants them to eat all they can, as they return him a vastly increased value in milk. The quantity for a cow must be regulated by experiment and by sound judgment, avoiding surfeiting. He gives six to seven quarts of bran and two quarts of Indian meal for the morning feed, hay at noon, and bran meal again in the evening.—Bran has a value for milch cows, as a milk producer, which is not fully appreciated or known, and seems for all stock, but especially neat cattle, to promote health and thrift. On first turning out to fresh pasture in the spring, succulent grass is apt to produce scouring. This is often corrected by a feed once a day of bran, in connection with free access always to a lump of rock salt.—An analysis of bran shows it abounds in phosphates the very element of milk and bones.

### THE FIRST THOUSAND DOLLARS.

The first thousand dollars that a young man, after going out into the world to act for himself, earns and saves will generally settle the question of business life with him. There may be exceptions to this statement; yet, for a rule, we think that it will hold true.

The first condition that the young man actually earns the thousand dollars in question. He does not inherit this sum. It does not come to him by a streak of good luck, as the result of a fortunate venture in the purchase and sale of a hundred shares of stock. It is the fruit of personal industry. He gives his time and his labor for it. While he is thus earning and saving it, he must earn two or three, or perhaps four times as much to pay his current expenses. He is consequently held sternly to the task of industry for a very considerable period. The direct consequence to him is a steady, continuous and solid discipline in the habits of industry, in patient, persistent, forecasting and self-denying effort, breaking up all the tendencies to indolence and frivolity, and making him an earnest and watchful economist of time. He not only learns how to work, but he also acquires the love of work; and, moreover, he learns the value of the sum which he has thus saved out of his earnings. He has toiled for it; he has observed its slow increase from time to time; and in his estimate it represents so many months or years of practical labor. His ideas of life are shaped by his own experience.

These natural effects of earning the first thousand dollars we hold to be very large benefits. They are just the qualities of mind and body which are most likely to secure business success in after years. They constitute the best practical education which a man can have as a worker in this working world. They are gained in season for life's purposes; at the opening period, just when they are wanted, when foolish notions are most likely to mislead an experienced brain, and when, too, there is a full opportunity for their expansion and development in later years. Men have but one life to live; and hence they start from opening manhood but once. And the manner in which they start, the principles with which they start, the purposes they have in view, and the habits they form, will ordinarily determine the entire sequel of their career on earth. To succeed, men must have the *elements of success in themselves*. One great reason why there are so many useless, inefficient and poverty-stricken men on earth—or, rather, boys seeming to be men—consists in the simple fact that they did not start right. A prominent reason why the children of the rich so frequently amount to noth-

ing may be found in the luxury, ease and indolence which marked the commencement of their lives. It is the law of God that we should be workers on earth; and no one so well consults the best development of his being as when he conforms his practice to this law. The workers in some suitable sphere are the only really strong men in this world.

The *other* condition of the statement is that the thousand dollars should be saved, as an actual surplus beyond daily consumption. He who spends all he earns is always poor. He never has a dollar of accumulated wealth. The stream runs out as fast as it runs in. In spending his entire earnings he will, on the one hand, contract the habits of prodigality, with its kindred vices, and, on the other, lose those of a sound and judicious economy. This being the phase of things as life opens with him, his prospects for the future are a minus quantity. Life with him will be a failure; mature years will be marked by significance; and old age, if he lives to see it, will be loaded with poverty. He is an object of charity at the moment in which he ceases to be a producer, having no reserve upon which to draw in the day of adversity. Some men seem to be doomed to this by necessity, and in this case poverty and want are not their fault; yet a very large number make this condition their choice—and, hence, with them it is self-produced.

The great rule of good sense and Christian virtue is not to spend more than one earns, never to spend anything either foolishly or viciously and always spend as much less than one's earnings as is consistent with a reasonable degree of personal comfort and a proper sense of duty to God and man. This is the general thought which every one must apply for himself. It is not meanness, but economy. It is not selfishness, but a legitimate self-love. It is far more likely to dwell in the bosom of virtue than in that of depravity. It is, indeed, a form of virtue, graded to the realities and necessities of this life and not unfitting its subject for the enjoyments and glories of the next.

Now, in saving the first thousand dollars, the young man whom we have in view practices this economy. He lives within his means, and hence owes no debts he cannot pay; he never spends money in a foolish or vicious way; and, after a proper attention to his own wants, and the duties which bind him to others, of which questions he is the sole judge, he lays by, from month to month, or year to year, his surplus earnings as so much accumulated capital. At length he reaches the point, and is worth a thousand dollars. The lessons thus acquired will almost certainly last

him for a life time. They are wrought into the very tissues of his personal being. If fortune smile upon him, as it probably will, it will not make him a fool. He can stand prosperity without explosion. He understands economy, for he practiced it. It is with him not an idea merely; but a fact, and a fixed feature of character. The outflow of his earnings may increase with his increase of means; yet the law which governed and the processes which secured the saving of the first thousand dollars will be likely to stand by him in all time to come. Some men fail for the want of sufficient action to command success; others fail for the want of sufficient economy in respect to the products of action; still others fail for want of both. Some have no discretion in prosperity, and others have almost no energy and force in the day of adversity. The trained worker and trained economist belongs to one of these classes. His personal qualities make him a man—a sensible, prudent, forcible, practical man in any relation and all times.

We select a thousand dollars as the trial sum because it is not too large to be attainable in most cases, or so small as to be of easy attainment. It is about sufficient to put a young man to the test, and bring out what there is in him, and in this way give him a practical education for the business work of life.

It is quite true that this article refers mainly to a point in material civilization, development, and progress; and it is just as true that humanity was designed, while moving through this sphere, wisely and well to do the things that belong to this sphere. The present life has its laws and its necessities; and to obey the former and meet the latter is really a duty as it is to pray or sing psalms. There are six days in every week for business as well as a seventh for religious worship. Society rests on business. Productive industry is the life blood of the world. It feeds and clothes the race. The surplus earnings of humanity beyond immediate consumption constitute the accumulated wealth of mankind. It is first produced by industry, and then saved by economy; and but for it the race would be a herd of paupers and savages. The man who fools away this life in indolence or prodigality is a fool if there be no other life; and he certainly is a fool if there be another. The young man to whom it is a matter of no consequence whether he works or plays, whether he saves or spends, deserves a workhouse to task him and a short allowance to discipline him. The father who, having an ample fortune, brings up his sons upon this shiftless theory is practically their enemy, and is as inexcusable as he would be if he should poison them

with rum. To all such fathers and all such sons we commend the practical profit of earning and saving the first thousand dollars.

### THE EFFECT OF CHARCOAL ON FLOWERS.

A correspondent of the *Revue Horticole*, says that not long ago he made a bargain for a rosebush of magnificent growth and full of buds. He waited for them to blow, and expected roses worthy of such a noble plant and of the praises bestowed upon it by the vender, but when it bloomed all his hopes were blasted. The flowers were of a faded hue, and he discovered that he had only a middling multiflora, stale colored enough. He therefore resolved to sacrifice it to some experiments which he had in view. His attention had been directed to the effects of charcoal, as stated in some English publications. He then covered the earth in the pot in which the rosebush was about half an inch deep, with pulverized charcoal. Some days after he was astonished to see the roses which bloomed, of as fine a lively rose-color as he could wish. He determined to repeat the experiment, and therefore when the rosebush had done flowering he took off the charcoal and put fresh earth about the roots, and waited for the next spring impatiently to see the result of the experiment. When it bloomed the roses were at first pale and discolored but by applying the charcoal as before they soon assumed their rosy-red color. He then tried the powdered charcoal in large quantities upon petunias, and found that both the white and violet colored flowers were equally sensitive to its action. It always gave great vigor to the red or violet colors of the flowers, and the white petunias became veined with red or violet tints; the violets became covered with irregular spots of a bluish or almost black tint. Many persons who admired them thought they were choice new varieties from the seed. Yellow flowers appear to be insensible to the influence of charcoal.

**TO MAKE CUTTINGS GROW.**—I used to have a great deal of trouble to make current and gooseberry cuttings or slips grow, until I tried the following plan: I boiled some potatoes until they were nearly done, and then stuck one on each slip and put in the ground. Every slip sprouted and grew well all summer, with but one or two exceptions. The idea of putting the boiled potatoes to the end of the cuttings was to furnish and keep moisture enough for them to grow, until the roots became large enough to gather this moisture and substance from the soil. I never tried it on grape cuttings, but do not see any reason why it would not do as well with grapes as with anything else.

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We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine is built with an eye to *convenience, simplicity and durability*. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower with a first-class Self-Raking Reaper, thus giving our customers a simple, strong and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

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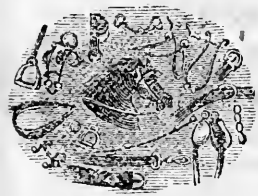
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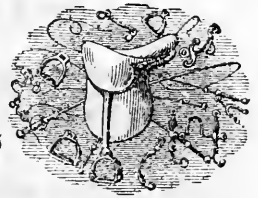
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We are authorized to announce that

**DR. WILLIAM M. WHITESIDE,**

late Lieutenant of Company E, 10th Regiment, first three months service, and  
Captain of Company I, 79th Regiment Penna. Volunteers of Lancaster, is a  
candidate for REGISTER of Lancaster county, subject to the decision of the  
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TRADE MARK.



And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent of the Act of Assembly*, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

H. E. SLAYMAKER, Agt.

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As Mr. Keeler has been in this business 16 or 18 years, and having served an apprenticeship at Coachmaking, he knows what the trade want in that line. All kinds of Bent Stuff for sale, or made to order—and Spokes of all sizes turned for persons having them on hand in the rough.

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KEELER & SHAEFFER, Lancaster, Pa.

## ZAHM & JACKSON,

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Beg leave to call the attention of persons in want of a good and reliable Time Keeper to their full assortment of

## AMERICAN AND SWISS WATCHES,

In Gold and Silver Cases which will be sold at prices which will defy competition. Also, a full assortment of

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Manufactured expressly for our sales and warranted coin.

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THE

# Lancaster Farmer

VOL. I. LANCASTER, PA., AUGUST, 1869. No. 8.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

WYLIE & GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

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All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

All advertisements, subscriptions and remittances, to Wylie & Griest, Printers.

## Essays.

### VEGETABLE PHYSIOLOGY.

#### ADVENTITIOUS BUDS.

In the prosecution of our researches for the true physiological principles and laws of vegetation, we expected to awaken a spirit of inquiry, in regard to the varied and important points in the science, and especially with reference to the peculiar habits of plants, their abnormal condition, and their species or individuality.

Attention has accordingly been directed to Adventitious Buds, by some of the members of the Horticultural Society; and we have thought proper to devote this communication to the nature and character of the plants, which is the result, or the development of those buds.

Such plants or branches, in the higher order of vegetation, are regarded by the best authority as irregular and abnormal. They seem to be the result of an interruption of the regular functional operation of the economy, and not a legitimate individuality as the natural result of the organs and powers of reproduction. To what extent such interruption might influence or interfere with the fructification or bloom of such growth it is difficult fully to determine. The plant of the lower order of vegetation is less dependent upon the

true germinal process of reproduction than those of the higher, and can, accordingly, be propagated by cuttings or a proper division of its organs. This is true also of certain species of the animal economy. But growth of an abnormal character may be found, as exceptions to general laws, in every variety of organic life.

The Adventitious Branch, is not an individual germinal reproduction, but simply a division of the same germ originating in the parenchyma, and produced on the woody system when it is surcharged with sap, and to expect just as much from it either in bearing fruit or flowers, in regard to quantity or quality, would seem to run counter to the laws upon which true development or sexual propagation is founded. Careful cultivation, in some instances, might restore some of the vigor of vegetation of the parent growth, but it would require much more time to make it productive, and there is room for the conclusion that its powers of endurance will be materially weakened, with the chances of premature exhaustion and early death.

These nice distinctions can only be discovered and properly appreciated by the study of the remote principles of vegetable physiology; and a careful comparison of the nature and habit of such plants with those of a regular origin, in their respective botanical classification.

It seems to be settled by the best authority that no germ can meet its full power and destiny which is not the result of the reunion of two cells. This is the true germinal process and nature's method of reproduction in every living being, and no plant can be of legitimate growth without it. It may be interesting to know when and where this reunion takes place, and whether or not it is possible for the bud under consideration to exist without it. A discussion of this character would involve the locality of the sexual organs of the plant, the existence of an organ within an organism, and the nature of the parenchyma at certain localities,—its susceptibility to the external conditions of growth. It would also be a question whether, after all, such buds were not just as legitimate and regular as those from which the natural branches spring. But it will be recollected

that there are distinctive parts and organs peculiar to all manner of vegetable organization, each with its own special organs devoted to a given purpose, and all that is developed outside of those general principles and laws of the economy must be regarded as abnormal and irregular. Such, then, we regard the Adventitious Bud to be. The root or the stem or ascending axis have their legitimate functions to perform, and as far as we have studied those functions, we have seen that they are not designed to develop a multitude of shoots or branches from the same germ, but to build up an individual structure, and they are but parts or organs of the same. If, therefore, you grow a branch from the stem or root of a plant or tree in full life and vigor, the plain logical conclusion as well as physiological deduction is, that such branch or bud is irregular and abnormal.

There are many tribes of animals and plants which multiply spontaneously, and are capable of maintaining an independent existence, either from the prolific nature of the organism, or an artificial division of its parts. This process is in keeping with its nature, and is obviously to be regarded as a *normal* manifestation of the ordinary operations of the economy. There is no difficulty here in establishing an independent existence, and the new growth thus propagated has all the organs, and is capable of performing all the functions peculiar to the parent germ or original organism. But the branches which sprout from the root or any part of the trunk of a tree, or any part of a living animal body, when all the organs are already faithful to the economy, and there is a full natural development, are of a far different character, come into the science in an irregular way, and cannot be regarded in the light of nature in the same category as the structure of ordinary power and capacity.

The star fish, among others of the lower tribes of the animal kingdom, is capable of propagation by a division of its parts. Here, then, seems to be an elongation of the principles of generation, with the organic growth, and each divided part, when fully developed, will rank as a true individual existence. But where there are abnormal growths upon any part of the body of an animal of a higher order of organization, such growth is not capable of a normal function while in connection with the living body; and when separated, it dies. The growths just referred to are not those of a diseased or pathological condition of the system, but spontaneous out-croppings of members or organs of the body, and as such they are the result of some functional disturbance of the remote principles of life, or the elements and conditions of vital activity. And though they

seem to fall in naturally with a healthy development of the organism, their very existence stamps the object with the principles of an outside issue, and renders the subject, not only an unnatural being, but often a physiological monstrosity.

When those adventitious growths occur upon the living animal, they are rarely capable of any physical power, and if so, they lack endurance, and are, of course, the first to yield to the wear and decay of nature. There are well authenticated cases on record of a third growth of teeth in the human species, but in no instance have they ever proved to be of lasting service.

There is a case reported of a child having been born in England with two thumbs upon one hand, or rather a thumb doubled from the first joint, the outer one less than the other, each part having a perfect nail. When the child was about three years old, the lesser one was taken off by what was regarded as a well performed surgical operation. But to the astonishment of all, it grew again with the perfect nail as before. The family went to reside in London, where the case came to the notice of the surgeon of the Queen's household. This surgeon thought the former operation had been imperfectly performed, and accordingly executed his own plan in removing it, and turned the ball of the joint fairly out of the socket. Notwithstanding this it grew again, nail and all, as before, and it remained in this state.

These instances show an apparent perfect power in the vital activity of those abnormal growths, and yet their inability to take rank as members or organs of a distinctive individuality of true germinal origin, as other members or organs of the body. Their abnormal condition and relation to the economy, therefore, must be regarded as settled beyond a peradventure.

To establish the "individuality" of the plant, we must pay strict regard to its *functional capacity*. To admit any other aspect of the argument, we run it into a question of degree, and nothing can well be more variable, and consequently more at variance with true germinal process. We must, in the latter instance, admit such individuality to "exist in the segments of the leaves of one plant, and in the entire leaves of a second, in the leaf-bud of a third, in the branches of a fourth, in the entire axis and appendages of a fifth; whilst in a sixth, the individuality shall entirely depend upon circumstances, its buds not being able to sustain their vitality after their detachment, unless their development be favored by engrafting them on the living stock." To maintain the true germinal individuality of the plant, it must have the power to develop roots,

and it cannot perform the generative act unless it can evolve the flower.

Can the Adventitious Bud do this? and if its individuality is to be established by the fact that it will grow when engrafted on the living stock, might not the same attribute be allowed to parts of animals, such as "teeth, testes, ovaries, &c., which have been removed from one animal and implanted in another, and which have formed new attachments to the latter, and continued to grow.

Our limits will not allow an exhaustive argument upon this branch of our subject. There is room for the conclusion, in the light of what we have here set forth, however, that the "*individuality*" of the "adventitious growth" cannot be accepted as being in strict conformity with physiological laws and principles. That it can live and grow, and even bear fruit when surrounded with its proper conditions, or be engrafted upon other living plants, no one will deny, but it exists only in abject dependence, with no true germinal origin, and all the irregularities which seem to be peculiar to its habits and powers of fructification, and which have been noticed by those whose business it is to cultivate and propagate trees and shrubbery, would only be characteristic.

S. W.

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## THE TEETH OF ANIMALS.

### No. I.

Our heading may strike the reader as being rather of a novel character for the promiscuous reading of a farm journal. It is a subject, (it might be said) much better suited for a dental periodical than the columns of the LANCASTER FARMER. Let us have more practical matter, and the FARMER will have a wider range of usefulness, and a much better subscription list.

This may be true in a certain sense, and yet a journal of the dimension and character of the FARMER might very soon run itself out with too much of what is called "practical matter." May not, after all, subjects which blend the scientific with the practical, be the proper food for the inquiring mind of the husbandman, whose every-day experience is a satiety of the practical, with a reaching desire for that which is a little beyond the labor of his hands, and the objects of his vision.

At the commencement of our journalistic enterprise, we thought those scientific papers upon the subjects of bug-ology and bird-ology and vegetable physiology were superfluous, but have we not been vastly benefitted by their perusal? And is it not evident that their very existence in our journal has given it a position and dignity which it never could have reached by being devoted *entirely* to practical matters?

We propose to contribute a series of short articles upon the Comparative Anatomy of the Teeth, and to make them just as practical as possible; and in order to give our readers an idea of what we mean by this phraseology we will simply state that it is to direct attention to the peculiarities of the teeth of their horses and cattle, and enable them, by comparison, to judge of their age and habits. In the prosecution of this task, we will take occasion to introduce the peculiarities of the teeth of all the tribes of the animal kingdom, in their various classification, and we feel very certain that the perusal of these articles will benefit the reader fully as much as the writer will be compensated in and by his researches to produce them.

How often persons assume a cunning look, and open the mouths of horses, to judge of their age by the marks on their teeth, or the number of them, when they know about as much of the subject as the horse itself. And, also, in regard to the *habits* of the animal. They will pass and repass a cow or an ox for a life time, and see them chewing the cud, and not have the least idea of the admirable provision of nature which renders all that use of the teeth necessary.

The anatomy of the teeth will, also, often suggest the kind of food which nature has designed for the animal, and thus much practical information will be gathered from a source whence, at first sight, nothing but dry anatomical study might seemed to be promised.

It is not our design to give a dissertation upon the human teeth. Whilst this subject might be of vast benefit to all, yet the examination of similar organs in the inferior animals has always been a subject of the deepest interest and close study to the anatomist and physiologist, and always been regarded by them as essential to a full understanding of the structure and functions of the various organs of the human body.

What is true of the body as a whole, applies with equal force to its several parts. Each organ finds its analogue in some one or more of the inferior animals; and the teeth, as forming parts, and indispensable parts of the human frame, come in equally for their share of examination in this comparison of organs in the inferior animals.

The importance of this subject has now fully aroused the master spirits of the professions to its investigation, and their labors have already been crowned with the most useful and happy results.

S. W.

---

GOOD TOOLS are half the battle in farming. Be sure to hunt up what you want, and buy it.

## Agricultural.

### THE ALDERNEY BREED OF CATTLE.

A gentleman of Lancaster, who has always taken great interest in matters pertaining to agriculture, recently showed us a calf of the above breed which he had imported from Connecticut, and which he stated he would not part with for the sum of one hundred dollars. He added that he was getting a milk cow of the same breed, for which he was paying the sum of two hundred and fifty dollars. His remarks made such an impression upon us that we have examined the authorities upon the different kinds of cattle, and find the Alderneys described as furnishing the richest milk of any other kind of cows that are known. That our readers may have the benefit of our investigations on this matter, we submit the description of the Alderney cattle as given in Loudon's Encyclopædia of Agriculture, page 1018.

"The Alderney cattle are to be met with only about the seats of a few great landholders, where they are kept chiefly for their milk, which is very rich, though small in quantity. This race is considered by very competent judges as too delicate and tender to be propagated to any extent in Britain, at least in its northern parts. Their color is mostly yellow or light red, with white or mottled faces; they have short crumpled horns, are small in size and very ill shaped, yet they are a fine breed in general, and their beef, though high colored, is very well flavored. I have seen, says Culley, some very useful cattle bred from a cross between an Alderney cow and a short horned bull."

On this breed of cattle we clip the following remarks of Tim Bunker, (from the July number of the American Agriculturist,) who seems to be well posted on every subject he undertakes to dilate.

"The Jersey cows (Alderneys) are small, thin, and their milking quantities are fabulous. Now, I do not see why we may not breed cows for butter just as well as for beef, or for large quantities of milk, or to give us sprightly red working oxen. There is certainly need enough for it, for butter is about the dearest among farm products. If I wanted everything in one animal I should not breed Jerseys, though I have seen very fair grade working oxen, and I have eaten as good beef of this stock as ever came to market. I want good, rich milk for my coffee, cream for my strawberries and other fruits, and golden butter for my johnny cakes and lima beans. If there is any animal that can equal the Jersey cow in giving rich milk

I have not found it. Just how this breed came by this quality I may not be able to tell. Titus Oaks may be right or wrong in laying it to the buffalo of America. It shows a pretty keen scent to smell a buffalo track after two centuries. But of the fact that this breed gives richer milk than any other there can be no doubt. They will make more rich cream and butter out of a given quantity of fodder than the Durham or Devons. There is, indeed, a difference among them, as there is among other breeds. But they as uniformly give good rich milk as the short horns give large carcasses of good, juicy beef. There are multitudes of men, and the number is steadily increasing in our cities and villages, who keep but one or two cows for family supplies. They do not want to sell milk. They do not want skim milk for the pigs. They want good milk for the baby, plenty of cream, and butter of the best quality for the table. They have fastidious tastes, it may be, but they have them very decidedly, and are willing to pay for them. Now, I claim that it is a farmer's business to supply the market with those articles in his line that are most in demand. If scrub cows are going out of fashion, and nobody wants them who can get anything better, what is the use of my raising them? If men who can afford to pay for it want their milk condensed the Jersey cow will do it about as well as Gail Borden and it won't cost half so much. I don't mean any reflection upon that gentleman or the rival milk condensers, but I rather guess if the Jerseys had been better known their occupation would have been gone. These folks, too, who want family cows, haven't a great deal of barn room, and they want the cow put up in the smallest compass. The Jersey hits this nail exactly on the head. You can't put her in a hencoop exactly, but you can put her and the coop into a common stall without overcrowding. They want something too, that is just a little handsome, and fond of being petted, to keep company with the well groomed horses, and to share the attentions of Levi, when he has put the last touch upon his sleek team. I know there are some very bad looking Jerseys, with ugly heads, sharp bones and thin, lank carcasses. But take them as a race they are fair to the sight and an ornament to the farm yard. A little oil-meal inside and the brush outside, improve their looks and help the butter wonderfully. Their mealy mouths, perhaps, indicate the want of meal. At any rate it is a pretty safe rule to follow. There are several different styles of Jersey cattle. I like the wild Jersey type the best, which is very popular with some of our best breeders. They have black tongues, black noses and mealy muzzles. The



horns are black, small, firm, pointed, brown near the head, but not waxy. In shape, the horns have but one curve (except that the horns of females turn back a little at the very end,) standing high—as high as at right angles with a line drawn from the mouth to the ear, forming a curve of nearly half a circle. The foundation color of the females is chocolate, dark brown or olive along the back, and a brownish gray between the horns and eyes. The hair is soft, silky or woolly on the body, through which there project, after the calves are four to eight months old, long, coarse hairs, often tipped with white or brown, sometimes all black or other color. The males are much darker, nearly black, but neither males nor females have any white spots, and both change color. The skin, udder, teats, and inside of the ears are olive brown, with a brown stripe in the ear, and the ends of the tail terminate in a brush, like the American buffalo. There is no coloring matter on the end of the tail, but it is dry and scaly. Then they have a wild look and action, not easily described, which I suppose Titus would say smelt of the buffalo. Cattle of this type are as handsome as deer, and will long be in demand at high prices, for folks will buy them as they do pictures—just to look at.”

It will be perceived in the agricultural report of 1867, page 292-5, that the celebrated dairymen of Chester and Delaware counties have discovered the superior qualities of the Jersey or Alderney stock, and prefer them to all others for dairy purposes. Many of them keep no others. We quote again from the report of a committee who had visited the Chester dairymen: “From this farm we returned to Philadelphia, and went to Chelton Hills, on the West Pennsylvania railroad, to visit the Jersey cows imported by Chas. L. Sharpless. They were selected by Mr. Sharpless in 1865, on the island of Jersey, and have only now been admitted in consequence of the danger that had previously existed in introducing the rinderpest. They are an exceedingly fine lot of cows, seven in number; one of them, “Duchess,” is by far the finest animal that any of us had seen. She is now giving, by actual measurement, 21 quarts of milk daily, which yields more than four quarts of the richest cream, and she is as fine and delicate as a thoroughbred horse. Her color is brown and white, with the richest orange colored skin under the white hair. Her horns are small, thin, and of a translucent amber hue, slightly tipped with black. After a long examination of her our party broke up, being fully confirmed in our opinion, that for the butter dairy the Jersey is *par excellence*, the cow of all others to select. Again the committee say: “Mr. Penrose, as well as Mr.

Shaeffer, keep the Alderney. For a butter dairy there is no doubt of their superiority.”

We transfer to the pages of our journal the following excellent article, credited to the *Rural New Yorker*, which treats upon a subject on which we have often meditated. But a few days since a gentleman and ourselves had a conversation upon this very matter, and he asked if we had ever met with any thing treating thereon. We agreed that this popular delusion should be dissipated as speedily as possible from the public mind, and we think this article may help to explode a superstition which has not even the semblance of a vision upon which to rest itself. There are numbers of men who pass for our most intelligent citizens who cling to this ancient delusion of planting crops and doing all kinds of work in certain signs:

#### EXPLODED THEORIES.

##### DO THE CONSTELLATIONS OF THE ZODIAC INFLUENCE VEGETATION ON THE EARTH?

It is a favorite idea among many of our old farmers, that the moon and constellations in the zodiac have a great influence upon the vegetation of this world. This idea has been handed down to them by tradition; nor is the end likely to be with this generation. Among those of German descent is this infatuation the most prevalent. Although it does not speak well for their intelligence, yet it shows the obstinate tenacity with which they hold to the ignorant creeds and dark mysteries of by-gone ages. This superstition, or rather rampant ignorance, has stood in the way of their own prosperity—the progress of agriculture and home improvements—and, consequently, has materially impeded the progress of civilization and refinement wherever it has been adhered to.

These deluded people believe that each vegetable grows best when planted in its appropriate sign. For instance, potatoes should be planted in the sign of the “scales” or “lion,” in order that they may grow large, always avoiding the sign of the “fish,” for if they are planted in that sign they will be sure to get “watery potatoes.” Again, clover seed should be sown in a dry sign, or it will make horses slobber. Vinegar should be made in the sign of the “lion,” in the first quarter of the moon, in order that it may grow strong.

The moon, too, it is said, exerts a powerful influence on new roofs and fences. I was even surprised with a notice in the *Rural* that a certain man out West had succeeded in killing a lot of locust trees by cutting them down in the “dark of the moon,” just as though that had done the whole business.

Now, for the benefit of the misguided, I will endeavor to show that these signs are generally an unmitigated humbug. I will venture to say that one-half of those who pay so much attention to them, know nothing at all about them outside of their almanacs. The zodiac is an imaginary belt beyond the apparent path of the sun in the heavens. This belt is sixteen degrees broad, and,

of course, extends clear around the heavens, or three hundred and sixty degrees. The distance between every thirty degrees is called a sign. The sun, in its apparent path, seems to travel eastward through all these twelve signs once a year. The ancients imagined the stars in each sign to represent some animal or object, and gave them names accordingly. They also pretended to predict future events by these signs, the science of which was called astrology. But how the modern "prophets" came to pervert the original "science" in applying it to the growth of plants, is to me unknown.

Now the question is, do these constellations of the zodiac affect the growth of plants on the earth? For good, healthy growth, plants require light, heat, air, and the necessary elements in the soil. Now the nearest star in the signs of the zodiac has been demonstrated to be more than *twenty billions* of miles distant from the earth. They, no doubt, influence the motions of the earth to a limited extent, but the light and heat received from *all the stars together* is not enough to justify the assertion that they affect the growth of vegetation here on the earth; much less, then, would the stars of a single constellation constitute so much light and heat as to materially influence its growth.

The earth must be balanced as it floats in its orbit around the sun, and since that is a truth, it necessarily follows that the attraction must be just about the same in every part of its orbit. Of course, account must be taken of the elliptical shape of the earth's orbit, and the place in which the earth is, whether at its perihelion or at its aphelion; but this difference of motion is evidently not occasioned by the fixed stars, and consequently their influence is about the same *all the time*. And since all these are astronomical and philosophical truths, it follows that one day is as good for planting as another, the soil and season favorable.

Now, let me attack the theory of the moon. It is claimed that if a roof is put on a building in the dark of the moon, the shingles will remain in their places; but if put on while the moon is increasing they will inevitably "turn up;" likewise with ordinary nail fences. The moon, apparently, goes around the earth in about the same time, *in whatever quarter it is*. To be sure, it appears later every day, but it nevertheless goes around (ordinarily speaking) in a little over twenty-four hours, as regularly as the sun. Now, it must be gravitation or attraction that causes these shingles to turn up, and if it has the power to raise them during one revolution when it is full, why does it not have the same power when in its last quarter, it being at the same distance from the earth? This leads to absurdity at once. The moon certainly does affect the growth of vegetation, but not to the extent claimed by these ultra *signists*. The light reflected from the moon contributes very little to the growth of plants, but its light and heat are so feeble in comparison to those of the sun, that it is not considered of much account by those who have investigated the matter.

These are old and exploded theories, and are only upheld by those who are far behind the times in their knowledge of natural sciences. When education once becomes more universally

disseminated throughout the world, the people will better understand the mysterious workings of that "Glorious Architect who built the skies." But as we are in "the foremost ranks of all the files of time," and have the accumulated knowledge of all the ages, we should endeavor to profit by it, and to use our advantages in such a way as to bring about the best results for the refinement of the people and the improvement of humanity.  
Galion, Ohio. J. C. S.

## Botany.

### WEEDS.—No. 5.

#### POKEWEED.

The name Poke is an abbreviation of Poca, by which it was known in Virginia over one hundred and fifty years ago; it has other local and common names, such as Seoke, Garget, Pigeon Berry, Red Ink Plant. The French call it *Raisin d'Amerique*; the botanical name is *Phytolacca decandra*; the generic name is compounded from the Greek, *Phiton*, *plant*, and the French *lac*, *lake*, in allusion to the coloring matter resembling that pigment which the berries yield; the specific name, *decandra*, because it has ten stamens, as well as ten styles.

From the testimony of different writers it appears that the *Phytolacca decandra* is an inhabitant not only of North America, but likewise of the south of Europe from Portugal to Greece, and also of the Barbary States in Africa. Its origin is, however, considered American. Parkinson, in his *Theatrum Botanicum*, published in 1640, denominates it "*Solanum magnum Virginiassum rubrum*." This is the oldest account found respecting it.

This plant is well known. It prefers a rich soil, on banks, borders of fields, in clearings, and along roadsides, &c., and is regarded as a weed by all neat farmers. It was popular during the campaign of James K. Polk for President, in 1844. The stalks, which are annual, grow to six and even nine feet in height. They are round, smooth, branched, and when matured of a fine purple color. The flowers are succeeded by long clusters of dark purple berries, almost black, depressed, with ten furrows. Every schoolboy knows them and has tried them in writing or coloring pictures. The juice of the berries is of a very fine, bright purple color, but this color is extremely fugacious, and disappears in a short time from cloth or paper that has been tinged with it.

A few drops of lime water added to this purple juice changes it to yellow, but *when fresh* the smallest quantity of water is sufficient to restore

its purple hue, and forms a more delicate test for acids than an infusion of litmus of equal depth or color; one-fourth the amount of acid is sufficient to change it that it takes to change the litmus, and is therefore four times as sensible. The taste of the berries is sweet and nauseous and slightly acrimonious. In Portugal and in France they were formerly employed to improve the color of red wines, until the interference of government became necessary to put a stop to the practice.

They were at one time considered a specific for the cure of cancer. There is a letter published from Dr. Franklin to Dr. Golden, in which he says: "I am heartily glad to hear more instances of the success of the Pokeweed in the cure of cancer. You deserve highly of mankind for the communication. But I find in Boston they are at a loss to know the right plant, some asserting it is what they call Mechoacan, others other things. In one of their late papers it is publicly requested that a perfect description may be given of the plant, its place of growth, &c. I have mislaid the paper or I would send it to you. I thought you had described it pretty fully." Another letter of Dr. Franklin to M. Dubourg commences with: "I apprehend that our pokeweed is what botanists term *Phytolacca*, &c.," referring to the juice used and Dr. Golden's description. This is simply of interest as the writing of Dr. Benj. Franklin respecting this plant.

The root also had and may still have considerable reputation as a medicine. Dr. Bigelow gives a lengthy account of it in his *American Medical Botany*. Dr. Darlington says, in his *Agricultural Botany*, that "the *young shoots* of this plant afford a good substitute for *asparagus*; the *root* is said to be actively emetic" (and I add truly so when collected in autumn, rather too much so to make it safe.) He continues, "and the tincture of the *ripe berries* is, or was a popular remedy for chronic rheumatism. The mature berries, moreover, have been used by the pastry cook in making *pies* of equivocal merit." I agree with the doctor in that respect. I like *pies of strawberries*, but *pokeberries* are not to my taste. Poke is a weed after all. "Enuf said!" J. S.

**TEMPERATURE FOR CHURNING.**—In cold weather the cream should be about 65° degrees, not higher, when you begin churning. In warm weather 62 degrees is about right; for in the course of the operation the temperature will rise, but should not get above 67 degrees. Avoid adding much of either hot or cold water to secure the proper degree of warmth.

An acre of growing wheat absorbs and throws off ten tons of water per day.

## Editorial.

### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Agricultural and Horticultural Society, of Lancaster county, met at the Orphans' Court Room, in the city of Lancaster, Monday, July 5th, at the usual hour, Henry M. Engle, President, and Alex. Harris, Secretary.

Owing to the day being a holiday, the meeting was small, but very interesting.

After waiting a considerable time for the further arrival of members, the Chairman called the meeting to order, and the Secretary read the minutes, which were approved without dissent.

S. S. Rathvon, the chairman of the Committee who had charge of the late fruit exhibition, submitted his report, showing that the exhibition had cleared itself of expenses, and left the sum of one dollar and twenty-five cents in the treasury. The report was adopted and the Committee discharged.

S. S. Rathvon offered the following resolution, viz.:

WHEREAS, the *American Pomological Society* intends to hold its next annual meeting in Horticultural Hall, Philadelphia, Pa., on the 15th day of September, 1869; and,

WHEREAS, The *Pennsylvania Horticultural Society* intends to hold its semi-annual exhibition at the same time and place; and,

WHEREAS, "All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States and British Provinces, are invited to send delegations as large as they deem expedient," and take seats in the convention, and also to contribute specimens of fruits from their respective districts; therefore

*Resolved*, That this Society appoint ten members to attend said meeting, as delegates from the Lancaster City and County Agricultural and Horticultural Society, with power to fill up the requisite number by their own appointments, in case the delegation should not be full, whether said substitutes are members of this Society or not, only so that they are respectable citizens of Lancaster county, and interested in the cultivation of fruits.

*Resolved*, That the Secretary send a notice to each delegate, or as many of them as are not present at this meeting, informing them of their appointment, and also of the time of the convention, and requesting them, if they attend, to take with them specimens of their fruit, if they have any suitable for exhibition.

The resolution was adopted, and the appointment deferred until the next meeting of the Society, when there will be a fuller attendance of the members of the Society.

Mr. Rathvon also offered the following resolution, which was adopted:

WHEREAS, The "Lancaster City and County Agricultural Park Association" has announced its intention to hold its second semi-annual exhibition on the 3d, 4th, 5th, 6th, and 7th of October next; and

WHEREAS, It is presumed that our own Society will hold an Autumn Exhibition near that time; therefore,

*Resolved*, That a committee of five be appointed by the President of this Society, to consult, consider, and inquire in regard to the expediency of holding an exhibition at the same time, and place, in connection with the Park Association, and upon what conditions such a temporary union could be effected, said committee to report in writing at the next meeting of this Society.

The Chairman appointed the following gentlemen on the said Committee of Conference, viz.: S. S. Rathvon, Dr. W. L. Diffenderfer, Dr. Saml. Welchens, J. G. Kreider, and Alex. Harris.

The Secretary read the following question, which had been handed him—To the President and members of the Agricultural and Horticultural Society: A friend desires to know if any remedy can be proposed by which ants may be prevented from creeping up young fruit trees, and infesting them with curled leaf. The ants are found on the under side of the leaf.—A FRIEND OF YOUR SOCIETY.

S. S. Rathvon, in reply to the above question, said that no other remedy could be given than syringing the leaves with tobacco-juice, whale-oil soap-suds, or common lye, or by sprinkling water over the trees and leaves, and dusting them with common lime.

H. M. Engle remarked that he had never found anything more effective than syringing the leaves with tobacco-juice.

Dr. Saml. Welchens next proceeded to read a short essay upon the teeth of stock animals.

S. S. Rathvon also read one upon the bean weevil, and, upon the conclusion of it said that it was to him a novelty to find a weevil in beans.

J. G. Kreider presented some heads of the early Boughton wheat, some heads of barley, and some heads of the Brunswick oats. He also had some heads of German red wheat.

John B. Erb had raspberries; Brinkle's orange, Doolittle's Black cap, and English Morello cherries.

S. S. Rathvon showed some clusters of Clinton grapes. He likewise exhibited some large gooseberries, grown by David Hartman, Jr.

Henry M. Engle had of the cluster gooseberries, Gloria de Sablons Currants, Cherry Currants, Black Naples Currants, and common red Dutch. He also had Philadelphia black cap, and Brinkle orange raspberries.

The testing of the fruits on this occasion was

the most interesting part of the proceedings, all seeming to enjoy it with zest, the fruits being in abundance, and the spectators so limited that ample scope existed for a full comparison of the qualities of the different varieties. After the termination of this most agreeable part of the proceedings, the Society, on motion, adjourned.

### HORTICULTURAL EXHIBITIONS.

It seems unquestionable—in our minds at least—that if the Scripture injunction "Whatsoever thy hand findeth for thee to do, do it with thymight." has any application at all to secular affairs, it carries with it an additional force, when applied to the getting up of horticultural exhibitions. Be cause, without some such stimulating spirit, they must prove unsatisfactory to the public, and discreditable to those engaged in them. The merely recorded resolution of a Society, or any voluntary body of men, no matter how unanimously adopted, and however blazoned in show-cards and public advertisements, will never successfully effect the end, if each individual member does not work privately in that direction, and also work with his might. Just see with what persevering energy men think and work in ultimating the evils, sins, and crimes, which afflict society; or the labors, deprivations, and vexations, which others endure in accomplishing their own selfish purposes; and how comparatively little is done, and how feebly executed, in matters which do not promise an immediate pecuniary reward. In our view, the reason that our horticultural exhibitions do not seem to be sufficiently appreciated and encouraged, is not to be attributed so much to the indifference of the public, as it is to the apathy of the members of the Society, under whose auspices those displays are gotten up. A society composed of hundreds of the wealthiest and most intelligent cultivators of the county, usually finds but a half dozen or so—a mere "corporal's guard"—who go to the trouble of placing their products on exhibition, and these perhaps do not bring specimens of all they have, nor the best they have; and sometimes so sparingly too, that their variety is not likely to be seen at all. The feeling seems to be, to gather delight, amusement and entertainment for themselves without contributing to the delight, amusement and entertainment of others. They seem to know little of the fears, the dreads, and the anxieties, which a committee feels, in making its promises to the public, lest they may not be sustained in making the affair they are commissioned to carry into effect, a credit to the association, and satisfactory to that public to whom they have appealed.

These reflectons have been suggested in contemplating the exhibition of our Society on the 14th of June last, which, although excellent in its character, so far as quality was concerned, yet was dreadfully deficient in variety and quantity. The affair plainly indicated that we have the material, but lack sadly the energy and public spirit, in bringing it freely out.

There can be no reasonable question about the utility of these exhibitions, for public demonstrations of some kind, are recognized as useful, by all the different organizations of our country, whether social, beneficial, moral, philanthropic or otherwise, and in them is often found one of the most stimulating elements of their progress. It is nothing more than "making friends of the unrighteous mammon," on a practical domestic plan, while at the same time it fosters that social intercourse which ought to exist among all men, and especially among those interested in kindred pursuits. "In order to increase the sum of human happiness, we should cultivate kind and fraternal feelings one with another," as well as cultivate the soil for mere worldly gain. "A true life consists in something else than simply accumulating property." "We do not, and cannot live by bread alone." The following from the columns of the *Journal of Agriculture*, relating to this subject, seems so happily written, that we do not hesitate to reproduce it here, because the moral and social elevatiou of our readers is one of the objects of our journal.

"The sole object and aim of too many individuals seems to be to get gain, let the consequences be what they may to others. The desire to accumulate wealth, regardless of the comfort and social happiness of our neighbors, and the interchange of friendly sentiments, should be ignored. Let us be more social, and cultivate our convivial qualities by frequent interchange of friendly greetings and social gatherings. Let no aristocracy be acknowledged, but that of intellect. Let us beautify our homes, and make them what they should be, by fostering a love of the beautiful." In ultimating these principles, no better instrumentality than that of periodical exhibitions of the work of our heads and hands can be used. If we cannot see an immediate pecuniary reward in such a course, let us nevertheless proceed, and if we are not the most incorrigibly selfish of all of God's creation, we shall soon find our chief reward in the love of a labor that will not be lost. Although our local society has thus far exercised but a moiety of its latent energies, yet its effects are becoming plainly visible upon the public mind, as well as upon its individual membership. All that is required is

more thorough individual action. Each man ought to regard the success of these little enterprises as depending on his own individual energies, whether he feels or sees the co-operative support of others or not. It is in accordance with moral and social law, that if we expect to freely receive, we must as freely and disinterestedly give.

### TRIM YOUR TREES.

This is only to remind you of the necessity of this branch of horticulture. The *Agriculturalist* and other journals describe the proper method of pruning. If the limbs are large and you must use the ax (some prefer a saw), have it very sharp and do not cut too close at first; commence on the under side of the limb, so that it does not peel the bark when falling, and then dress the wound close up to the main stem. If it is a fruit tree, a little melted grafting wax or composition brushed over the wound is very good. But I was going to say trim those locust and other trees along the roads and lanes, so that persons will not scratch their faces and tear the oilcloth on their wagons while driving along. If locust trees were kept properly trimmed they would make better timber for posts, &c. J. B. E.

### PLANT MORE TREES.

If you will not plant fruit trees, then try locust, and you will be sure to make money, if that is your object. Just look around about you and see what room for improvement. That lane or road-side ought to have locust trees to beautify it and make it comfortable, and in a few years how many dollars would it be worth! Do you see that waste corner in your field, that gully, or that old quarry hole, or that bank which you cannot farm to advantage? We say plant locust. It will be a saving bank, and you get your money and very large interest payed off in golden locust. See, now, if you can not improve your homes a great deal with only a trifling expense. See along those streams, ponds, or water courses how fast trees would grow. If it is too wet for locust, then plant willow, &c. Just think a little and you can find plenty of room for improvement. Plant trees along the banks of the creeks and other waste places, &c. This is and should be an age of improvement. J. B. E.

### AMERICAN POMOLOGICAL SOCIETY.

The next meeting of this Society will be commenced on the 15th of September next, at Horticultural Hall, Broad street, in the city of Philadelphia to continue in session two or three days. It promises to be one of the greatest gatherings of



the kind ever held in this country, and, so far, everything looks propitious to make it such. A general invitation has been extended to all Agricultural, Horticultural, Floricultural, and kindred Institutions in the United States, the Dominion of Canada and elsewhere, to send strong delegations to take seats in the Convention, and participate in its proceedings, and they will doubtless, to a large extent, take action accordingly. Already we hear of some States making liberal appropriations, in order to send representatives to this meeting, and others may follow. But the invitation is not confined to organized associations alone, for it is also extended to isolated fruit-growers and amateurs, and all other persons occupied in the cultivation of the soil. In approaching this shrine of Horticulture, it is desired that its votaries should not go empty handed, but that as many as possibly can, should take with them specimens of their productions, and place them on exhibition, and be prepared, if possible, to add their moiety to the general diffusion of knowledge upon the subjects brought before it. We trust an honorable record in the proceedings of this Pomological Convention will be made by the fruit-growers of the "Garden of Pennsylvania." Our local Society has already had the subject brought before it, and we trust that those appointed from Lancaster County to attend as delegates, will, for the time being, lay all other business aside, and give their undivided attention to the subject. There is much to learn, and, doubtless, also much to unlearn in the culture of fruit yet, before we can expect a return of the "good old times," with the improvements in quantity and quality, which the experiences of intervening years naturally ought to have developed. The Pennsylvania Horticultural Society will hold its semi-annual exhibition at the same time and place, so that on the whole, the occasion will be an interesting one, and worthy to be patronized and seen.

THE sophomore class of the Agricul. College at Amherst recently put in practice a degree of agricultural science by husking 450 bushels of corn in one afternoon. The estimated products of the college farm the past year are: Hay, 200 tons; oats, 300 bushels; shelled corn, 1,200 bushels; besides a good supply of garden vegetables.

SAVE THE BIRDS.—A certain insect lays 2,000 eggs, but a single tom-tit will destroy 200,000 eggs in a year. A swallow destroys 543 insects in a day, eggs and all. A sparrow's nest was found to contain 700 pairs of the upper wings of the cockchafer, though other food was procurable in abundance. So, save the birds.

AN EASY METHOD TO HAVE HEALTHY FRUIT TREES.—An experienced fruit grower, who possesses a beautiful orchard near the Niagara, river, Western New York, has used one simple method with great success. He takes ley from *leached ashes*, mixes a little grease with it, heats it quite warm, and with a syringe throws it up into all parts of the trees, branches and trunk. It will effectually kill all caterpillars, all kinds of worms that are either infesting the tree in nests or running over the bark. Trees treated in this manner were exceedingly healthy, beautiful, and vigorous in appearance, possessed a smooth, glossy bark, and bore the best apples of the country. The remedy is easy and cheap.

## Communications.

PHILADELPHIA, June 21, 1869.

MESSRS. S. S. RATHVON AND ALEX. HARRIS:

*Gentlemen:*—I regret that I did not in my communication of May 5th, set forth more fully why I did not think you did the "C. M." justice in the May number of your journal, as I find in the June number your views are given in a manner which will possibly militate against the sale of "Complete Manure," thereby injuring me in both reputation and in purse. I also regret that you did not, before publishing the last article, ask me wherein I considered you had done injustice to the article; as you state if it will be useful and necessary to refer to the "Farm Report" again, I beg that you will continue to render unto "Caesar the things that are Caesar's." I believe it is far from your wish to injure by word or deed any of the proprietors of the fertilizers used in the trial, and trust you will ascribe the same desire to me.

The report of the "Experimental Farm" is certainly a most instructive and interesting document, admitting of much careful study and consideration. It is rendered doubly so by the fact that Mr. Thomas Harvey is a gentleman who can be implicitly relied upon, for his carefulness, his strong sense of justice, and for being an intelligent, good farmer as well.

In entering upon an analysis of this report it will be necessary to take the condition of the farm into consideration. Mr. Harvey states that the soil contains sufficient phosphate of lime, and I have learned from other sources that in years past it has been very heavily treated with bone dust. This, therefore, is an important point, and one carrying with it much of the apparent lack of usefulness of artificial fertilizers in the trial, it



being fair to presume that the bulk of the whole of them was phosphate of lime. Next we must consider that the season of 1868 was very propitious for the crops of corn and grass in the section in which the experimental farm is situated.

Both Timothy and clover should be calculated as being among the most valuable products of a farm; it is in the grass where the profit of farming lies principally.

In estimating the value of hay it must be borne in mind that it is worth very nearly as much per pound as corn, and it will not do to ignore its highly nutritive properties and large amount of flesh and bone forming constituents. In fact, the seeds of Timothy and clover contain more phosphate of lime than those of any other cereals. It is this which renders it such valuable food for horses or cattle, the grains, corn, wheat, &c., containing so much larger proportions of fat or heat producing elements.

Here we have a farm producing without manure the following crops per acre :

- Timothy, 3,648 pounds.
- Clover, 4,464 do.
- Barley, 2,528 do.
- Corn, 5,280 do.

The yield showing clearly the high state of cultivation to which it has been brought by the use of artificial fertilizers, and showing as well that it is possible to manure a farm too heavily. In fact, there appears to be such a thing as overloading the stomach of a field for a particular crop. All of this, however, is a strong and conclusive argument in favor of bringing a place to this state of fertility. How gratifying it must be to the owner or renter of such a farm, to know that he can not add anything to increase its fertility or

productiveness, yet in a single crop, without fertilizer, enough of the mineral or organic substances may be removed by it to require a good, hearty meal of either in the next crop.

It is to be regretted that in the Baily trial the comparison is not so complete, as I miss some of the fertilizers used in the other crops, and have consequently averaged some of those not represented. This trial had one contingency which is very fairly stated by Mr. Harvey, viz. : That the barley sown contained a large admixture of oats; therefore the test was not as conclusive, certainly, as either he or others could wish. Barley is moreover, a crop but little raised in our section of country, and requires a peculiarity of soil and climate which exists further north of this.

The results in the corn trial go far towards proving that the soil of the farm needed no phosphates, having already quite enough of it.

In the following table the profits and loss in the experiments are accurately shown by the figures as given in the report. The result is not in any case remarkably favorable to the use of artificial manures upon this particular farm; but in the use upon a farm of ordinary size, in which there would be—

- 20 acres in Timothy.
- 20 " " Clover,
- 20 " " Corn,
- 20 " " Oats,
- 20 " " Wheat,
- 10 " " Barley,
- 5 " " Potatoes,
- 20 " " Pasture.
- 15 " " Wood.

Total, 150 acres.

We have as follows :

FERTILIZERS ON GRASS, NO. 1, PAGE 5. HAY VALUED AT ¼ CENT PER POUND.

	When applied.	State of weather and soil.	No. of lbs. applied per acre.	Commercial value.	Total yield per acre.	Gain in lbs. per acre.	Total profit per acre.	Loss.	Total profit on 20 acres.	Total loss on 20 acres.
Nothing.....					3648					
Baugh's Raw Bone Phosphate..	11th of	Snow on	400	\$11.20	4088	440		\$ 5.70		\$144.00
Baugh's Chicago Bone Fertilizer	4th mo.	" "	400	9.20	3608	18.40		9.70		194.00
Bowers' Complete Manure.....	" "	ground.	400	10.60	4784	1136	\$ 3.60		\$72.00	
Harrison's Plant Fertilizer.....	" "	" "	400	10.00	4512	864	.80		16.00	
Shoemaker's Phuine.....	25th of	" "	400	10.40	4768	1120	3.60		72.00	
Hewes' Raw Bone Phosphate....	4th mo.	Wet	400	10.60	4288	640		2.60		52.00
Moro Philips' Phosphate.....	7th of	and	400	10.60	4184	536		3.90		78.00
Whaun's Phosphate.....	5th mo.	Rainy.	400	10.60	4168	520		4.10		82.00

FERTILIZERS ON GRASS, No. 2, PAGE 6. HAY VALUED AT 1 1/4 CENTS PER POUND.

	When applied.	State of Weather and Soil.	No. of pounds applied per acre.	Commercial Value.	Total yield per acre.	Gain in lbs. per acre.	Total profit per acre.	Total loss per acre.	Total profit per 20 acres.	Total loss per 20 acres.
Nothing.....					4464					
Baugh's Raw Bone Phosphate.	7th of 5th mo.	Drizzly heavy rain after.	400	\$11.20	4408	loss 56		\$11.90		\$238.00
Hewes' Raw Bone Phosphate...			400	10.60	4712	248		7.50		150.00
Whaun's Phosphate.....			400	10.60	5048	584		3.30		66.00
Moro Phillips' Phosphate.....			400	10.60	5048	584		3.30		66.00
Shoemaker's Phuine.....			400	10.40	5072	608		2.80		56.00
Harrison's Plant Fertilizer.....			400	10.00	4896	432		4.60		92.00
Bowers' Complete Manure.....			400	10.60	5288	824		30		6.00
Baugh's Chicago Fertilizer.....			400	9.00	4896	432		3.80		76.00

BARLEY, PAGE 9. BARLEY VALUED AT FOUR CENTS PER POUND.

	Quantity of Fertilizer used per acre.	Cost in commercial value of Fertilizer used per acre.	Gross weight of produce per acre as it came from the field.	Weight of straw and chaff after threshing.	Quantity of grain, by measure, produced per acre.	Quantity of grain, by weight, per acre.	Total profit per acre.	Total loss per acre.	Total profit per ten acres.	Total loss per ten acres.
Nothing.....			2,522	1,552	31 bu. 60 qts.	920 lbs.				
Bowers' Com. Manure.....	400 lbs.	\$10.60	2,522	1,448	29 " 24 "	972 "		\$8.52		\$85.20
Shoemaker's Phuine.....	400 "	10.40	2,624	1,512	31 " 00 "	1,028 "		6.08		60.80
Harrison's Plant Fertilizer.	400 "	10.00	2,522	1,536	30 " 20 "	1,082 "		3.52		35.20
Baugh's Phosphate.....	400 "	11.20	2,776	1,682	34 " 00 "	1,066 "		5.36		53.60
Baugh's Chicago Fertilizer.	400 "	9.20	2,376	1,470	30 " 00 "	860 "		11.60		116.00
Hewes' Phosphate.....	400 "	10.60	2,912	1,658	33 " 16 "	1,152 "		1.32		13.20
Moro Phillips' Phos. (av.)..	400 "	10.60				1,026 "		6.36		63.60
Whaun's Phos. (average) ..	400 "	10.60				1,026 "		6.36		63.60

CORN, PAGE 10.—ESTIMATED FROM GROSS YIELD PER A, BY WEIGHT OF CORN IN EAR—VALUED AT 1 1/4c. per lb.

	Distance apart of each hill each way.	No. of stocks to hill.	Gross yield per A, by weight of corn in ear.	Sound corn per acre.	Nubbins per acre.	Total profit per acre.	Total loss per acre.	Total profit per 20 acres.	Total loss per 20 acres.
Dry seed, no fertilizer.....	4 by 4	4	5754	5341	413				
Whaun's phosphate in hill, 200 lbs. to acre.....	"	3	5465	5135	330		\$9.63		\$192.60
Hewes' " " " " " ".....	"	3	5362	5022	340		11.18		223.60
Baugh's Chicago Fertilizer, " " " " " ".....	"	3	5403	4898	505		9.86		197.20
Harrison's Plant " " " " " ".....	"	3	5589	5073	516		7.47		149.40
Moro Phillips' Phosphate, " " " " " ".....	"	3	5269	4888	381		12.57		251.40
Shoemaker's Phuine, " " " " " ".....	"	3	5537	5073	464		8.45		169.00
Baugh's raw bone Phos., " " " " " ".....	"	3	5300	4826	474		12.41		248.20
Bowers' Complete Manure, " " " " " ".....	"	3	5568	5125	443		8.09		161.80

POTATOES, (LARGE MONITORS,) PAGE 16. Estimate 50 rows, 300 feet long, 3 feet apart to acre. Value crop at 1½c. per lb, or 90c. per bushel.

	No. of lbs applied per row.	Commercial value.	Gross yield of potatoes per row of 100 yards, by weight.	Total profit per row.	Total profit per acre.	Total profit per 5 acres.
Hewes' Phosphate, 800 lbs per acre.....	16 lbs.	\$.42	1004 lbs.	\$ 1.08	\$ 54.00	\$270.00
Whann's " 800 " " ".....	16 "	.42	191½ "	2.45	122.50	612.50
Bowers' Complete Manure, 800 lbs per acre.	16 "	.42	203 "	2.64	132.00	660.00
Harrison's Plant Fertilizer, 800 " " ".....	16 "	.40	206 "	2.69	134.50	672.50
Shoemaker's Phuine, 800 " " ".....	16 "	.41½	210½ "	2.74	137.00	635.00
Moro Phillips' Phosphate, 800 " " ".....	16 "	.42	187 "	2.39	119.50	597.50
Baugh's Raw Bone Phosphate, 800 lbs per acre, (averaged.).....	16 "	.45	183 "	2.30	115.00	575.00
Baugh's Chicago Bone Fertilizer, 800 lbs per acre, (averaged.).....	16 "	.37	180 "	2.38	119.00	595.00

RECAPITULATION OF GAIN AND LOSS, IN A FARM OF 150 ACRES.

	Grass (20 acres.)	Clover (20 acres.)	Barley (10 acres.)	Corn (20 acres.)	Potatoes (5 acres.)	Total.	Gain.	Loss.
Baugh's Raw Bone Phosphate..... gain.	\$	\$	\$	\$	575.00	575.00	\$	\$78.00
" " " "..... loss.	114.00	238.00	53.60	248.20	595.00	634.80		
Baugh's Chicago Bone Fertilizer... gain.					595.00	595.00	11.80	
" " " "..... loss.	194.00	76.00	116.00	197.20	660.00	583.20		
Bowers' Complete Manure..... gain.	72.00				660.00	732.00	479.00	
" " " "..... loss.		6.00	85.20	161.80	672.50	253.00		
Harrison's Plant Fertilizer..... gain.	16.00				672.50	688.50	411.90	
" " " "..... loss.		92.00	35.20	149.40	685.00	276.60		
Shoemaker's Phuine..... gain.	72.00				685.00	757.00	471.20	
" " " "..... loss,		56.00	60.80	169.00	685.00	285.80		
Hewes' Raw Bone Phosphate..... gain.					270.00	270.00		168.80
" " " "..... loss.	52.00	150.00	13.20	223.60	270.00	438.80		
Moro Phillips' Phosphate..... gain.					597.50	597.50	138.50	
" " " "..... loss.	78.00	66.00	63.60	251.40	597.50	459.00		
Whann's Phosphate..... gain.					612.50	612.50	208.30	
" " " "..... loss.	12.00	66.00	63.60	192.60	612.50	404.20		

In the comparison of experiment, page 11 of the report (corn), it will not be unfair to take the total yield in experiment, page 10 (corn), where 200 lbs. of fertilizers were used, and compare it with the averaged yield, page 11 (corn), from Moro Phillips', making the problem stand in this way :

- 5269 : 5616 :: 5465 : 5824 lbs Whann's Phosphate.
- 5269 : 5616 :: 5362 : 5715 lbs Hewes' "
- 5269 : 5616 :: 5403 : 5759 lbs Baugh's Chicago Fertilizer.
- 5269 : 5616 :: 5589 : 5957 lbs Harrison's Plant. "
- 5269 : 5616 :: 5537 : 5902 lbs Shoemaker's Phuine.
- 5269 : 5616 :: 5300 : 5649 lbs Baugh's Raw Bone Phos.
- 5269 : 5616 :: 5568 : 5934 lbs Bower's Complete Manure.

Yours truly,

HENRY BOWER.

## Miscellaneous.

### EATABLE MUSHROOMS.

Few persons in this country are aware of the number of species of fungi, or mushrooms that are capable of being made useful as food, or for sauces, and of the excellent qualities that many of them present. One or two species, gathered with much apprehension, and frowned upon by most persons, exhaust the stock of availables in this direction, while our more fortunate or more learned foreign brethren have at their command varieties that serve to replace nearly every kind of food, or at least aid in giving to them a piquant flavor. One species, known as "vegetable beef-steak," cut in slices, stewed for half an hour, and then fried with gravy, would be readily mistaken, with the eyes shut, for the article the name of which it bears. The puff-balls sliced, fried, with egg and a few bread crumbs and fine herbs, present a no distant resemblance to very fine omelette.

Another species, called the "fairy ring mushroom," which is found on every grass plat in Europe, when broiled, on toast and before the fire under a cover, makes a dish "fit to set before the king." Another furnishes an excellent substitute for sweet-breads. The English cookery books abound in recipes for dressing these different forms of fungi, in every imaginable way, no less than a hundred recipes being found in some of them. It is, of course, well to be careful in regard to the use of mushrooms in this country, and where there is any reasonable doubt it is best to abstain from them altogether.

A gentleman, however, residing in North Carolina, the highest American authority on this family (Dr. Curtis), it is understood, has been for some time engaged in preparing an illustrated work upon the mushrooms, in which, by means of figures and general descriptions, he expects to be able to point out readily what species may be eaten and what must be avoided, so as to render it entirely practicable with such a guide to make a suitable selection from those that present themselves to notice in our daily walks. It is said to be perfectly possible by means of simple and intelligible instructions to distinguish between the noxious and useful kinds, though we shall not attempt here to give the rules which are published on this subject, for fear of leading some of our readers into difficulty.

We are assured that all the varieties that are known to the French and English cooks are found in this country, and some species of finer quali-

ties than any that are met with abroad. The total number of species that are not merely eatable, but actually desirable, as articles of food, amounts, we believe, to as many as sixty; and it is said that the proportion of the poisonous kinds to those that are wholesome, is not greater than exists between the wild fruits and berries that are ordinarily met with.

**APPLICATION OF MARL TO FRUIT TREES.**—Marl as a fertilizer has never been used to any great extent until within a few years. But that it supplies a large quantity of potash to growing plants has been abundantly proven by the experience and testimony of those who have used it for any length of time. It has also proved itself an excellent fertilizer on light soil, being especially adapted to promoting the growth of fruit trees, grape vines, etc. The larger the quantity applied the better will be the results; consequently, no one need fear applying too much of it, thereby causing injury to the tree, vine, or crop, as the case may be.

The best way in which marl may be applied to trees, vines, etc., with a certainty of good results following its use, is first to spread it about evenly on the ground, and then work it in. This can be effected quicker and more thoroughly by using a spade than any other tool. In thus working in the marl we would advise keeping it as near the surface as possible; as by so doing the alternate freezing and thawing of winter will render more available those properties contained in the marl which are most required by growing trees, plants, or vines.

Probably some of our readers have noticed that when large quantities of ashes are applied to the soil about fruit trees, the fruit is larger, more abundant, and of a finer quality. The cause of this is that the soil originally lacked a sufficient quantity of potash, the presence of which is very essential; and by using marl this difficulty is obviated.

For the purpose of promoting the growth of winter wheat the application of marl has proved highly advantageous and profitable. It should be applied to the growing wheat as soon as the surface of the ground is frozen sufficiently hard enough to bear a loaded wagon and team.

Marl abounds in New Jersey, of a superior quality; and is being used by farmers of that State and Pennsylvania with success.—*Rural American.*

FOR six years Mr. R. W. Buel, of Franklin, N. Y., was successful in raising onions with no other manure than leached ashes, of which he has applied about a bushel to the square rod. Last year his crop failed, as he was troubled by the maggot.

**LEAKS OF THE FARM.**—To feed nubbins of corn or dry ground-feed to cattle; because it is not properly chewed, as intended by nature, and as is necessary to be entirely digested.

To feed cattle at stacks, because they waste more than they eat.

To allow cattle to roam at will all over the country or the farm; because they trample and injure valuable grass-lands or grain-crops. Keep them at home, soil them, and have warm stables; you will save the manure and economize feed.

To allow hay to lie late before evening. It is better to neglect your corn to secure your hay early.

To burn valuable timber for fuel, at present prices of timber.

To let untilled land lie waste and unused when it would be quite easy to devote it to the production of trees for the purpose of building. The wood-fuel any farmer uses each winter would be worth in money sufficient to purchase coal for two years.

To let cattle out of the stable on cold days after eating dry feed, and be sent off to fill themselves with ice-water and get a chill, or stand huddled up in some fence-corner the greater part of the day.

To cultivate any more land than can be thoroughly taken care of and well manured.

If every farmer will look long and hard enough, he will find more leaks than he is aware of.

**TREES AND RAIN.**—A sugar grower, in the Sandwich Islands, having suffered seriously from drought, resolved, the *San Francisco Bulletin* says, to plant trees on the mountains adjoining his plantation. Fifty thousand forest trees were set out in 1860, and at this time no inconvenience is experienced from lack of rain water. Cisterns holding thirty thousand barrels of water have been constructed, and in this way, though there are no streams for irrigation, destructive droughts are insured against. A flourishing sugar plantation has been formed on a dry plain, which, without this expedient, would have been useless.

**HOW** about the mushrooms? We have a recollection of eating them some years ago, and thought they were excellent. So we thought we would try to cultivate the plants; we purchased a couple of cakes called mushroom spawn, about the size of a brick, and then prepared the bed and planted it according to the directions on the label; but we failed in our experiments, for they did not come up. Now I suppose there was something lacking in the management. Who will give us the necessary information how to raise the plants—and oblige  
J. B. E.

**AVERAGE AGE OF ANIMALS.**—The average age of cats is 15 years; of squirrels and hares, 7 or 8 years; of rabbits, 7; a bear rarely exceeds 20 years; a wolf, 20; a fox, 14 to 16; lions are long-lived, the one known by the name of Pompey living to the age of 70 years; elephants have been known, it is asserted, to live to the great age of 400 years. When Alexander the Great had conquered Porus, King of India, he took a great elephant which had fought very valiantly for the king, and named him Ajax, dedicated him to the sun, and let him go with this inscription: "Alexander, the son of Jupiter, dedicated Ajax to the sun." The elephant was found with this inscription 350 years after. Pigs have been known to live to the age of 20, and the rhinoceros to 20; a horse has been known to live to the age of 62, but average 25 to 30; camels sometimes live to the age of 100; stags are very long-lived; sheep seldom exceed the age of 10; cows live about 15 years, and are then killed for beef. Cuvier considers it probable that whales sometimes live 1,000 years; the dolphin and porpoise attain the age of 30; an eagle died at Vienna at the age of 104; ravens frequently reach the age of 100; swans have been known to live 300 years. Mr. Malerton has the skeleton of a swan that attained the age of 100 years. Pelicans are long-lived. A tortoise has been known to live 107 years.

**PLUMS.**—A correspondent of the *Rural World* thinks plums can be raised successfully if the fruit grower will only plant an abundance of trees instead of a very few.

"There is a secret about plum raising. We have discovered it in travelling over the country. We never visited a *large* plum orchard in our life that we did not find plenty of the fruit; and we never visited any place with eight or ten trees and found a good crop of this fruit. Now these facts set us to thinking, and the result of our thoughts is this: The secret connected with plum raising is simply to plant plenty of trees, so as give fruit to the curculio and to yourself also. If you will plant fifty, or a hundred, or two hundred trees, you will have enough for everybody. Every such orchard that we ever visited had plenty of ripe fruit. Some even complained that the curculio did not thin out the fruit enough—that the trees were overloaded.

"So we say to our readers, if you want plums at all, plant fifty or one hundred trees; then you will be sure to have all the fruit you want. The prices vary from three to ten dollars a bushel, and it is one of the most profitable crops raised."

**STAKING FRUIT TREES.**—We have for years practiced but one method of supporting young fruit trees, and like the way so well we shall continue it until we see something better than has yet come to our notice. We drive a stake which we usually make of a strip of board or plank, strong enough to support the tree, but elastic, to allow it considerable motion, about six or eight inches from the tree, on the south or west side, and fasten the tree to it by a strip of waste leather, forming a single loop, so as to allow the tree to move a little in the wind, fastening the ends of the leather on the top of the stake by a shingle nail. By this method the young tree has sufficient play to induce it to throw down its roots, which it will very soon, and stand erect without any support. This never mars or prevents the growth of the tree by stopping the circulation of the sap, and is the cheapest manner a tree can be stayed up. During the summer months it is well to cast off this leather, letting the tree depend upon its own energies.—*N. E. Homestead.*

**CLOUDS AS INDICATIONS OF THE WEATHER.**—Soft-looking or delicate clouds foretell fine weather, with moderate or light breezes; hard-edged, oily-looking clouds, wind. A dark, gloomy blue sky is windy; but a light, bright blue sky indicates fine weather. Generally the softer clouds look the less wind, but perhaps more rain may be expected; and the harder, more "greasy," rolled, tufted, or rugged, the stronger the coming wind will prove. Also, a bright yellow sky at sunset presages wind; a pale yellow, wet; and a greenish, sickly-looking color, wind and rain. Thus, by a prevalence of red, yellow, or other tints, the coming weather may be foretold very nearly; indeed, if aided by instruments, almost exactly. Small, inky-looking clouds foretell rain; light scud clouds, driving across heavy masses, show wind and rain; but if alone, may indicate wind only.

THE *Ohio Farmer* is responsible for the following:

Large horses are most admired by farmers; but farmers are most admired who *pony* up.

Prosperity is generally based upon knowledge and industry; the swine will always get most that *nose* most.

Farmers are like fowls; neither will get full *crops* without industry.

Because a man who attends a flock of sheep is a shepherd, makes it no reason that a man who keeps cows should be a *cow-ard*.

We like to see a farmer increase the growth of useful plants and shrubs around his home, but we do not like to see him use rails, poles, and boards to *prop-a-gate* with.

**SCRAPING AND WASHING TREES.**—We consider early winter to be the best time for scraping and washing the trunks of trees. It is well known to all observing fruit-growers that the loose bark of trees is the winter-quarters of myriads of insects; where they securely remain until the ensuing spring, when the warm, genial weather invites them to begin their destructive operations for the season. We have found a narrow saw, rather fine-toothed, to be an excellent tool in rasping off the superfluous bark. It accomplishes it more uniformly than a hoe, trowel, or other scraper. A trowel, or a short handled hoe, however, is very good when the other may not be possessed. After the bark is removed, the trunks should be washed thoroughly with a preparation of whale-oil soap and water, say in proportion of a pound of the soap to four gallons of water. It can be applied to large trees with a hickory broom or a stiff whitewash brush, and to small trees, especially dwarfs, with the hand scrub-brush. Sickly trees, which can at this season be easily detected by being covered with a species of fungi—or perhaps more properly a peculiar insectivorous deposit—should be scrubbed so as to completely remove this. The mixture will of itself benefit the tree, while the removal from the stem of all extraneous and injurious substances will give it new health and vigor the ensuing season—in some instances to a surprising extent. When whale-oil soap is not obtainable, ley may be used: but it should not be *very* strong, or it might be injurious to the roots of the tree, if applied plentifully and the tree small.—*Germantown Telegraph.*

**SOOT A POWERFUL FERTILIZER.**—Every farmer's family can find good use for the soot which is usually so abundant in their stove-pipes and chimneys. Twelve quarts of water, well mixed with soot, will make a powerful liquid manure, which will improve the growth of flowers, garden vegetables, or root crops. In either a liquid or solid state it makes an excellent top-dressing for grass or cereal crops.

**POTATOES.**—J. S. Smith, Roselle, Union County, N. J., raised last year, from five acres, over \$1,000 worth of potatoes, clear of all expenses. Naturally the ground was wet; but it was underdrained and moderately manured the previous year, and there was no rot. The quality was only second rate, but they netted \$1.50 a bushel.

From an acre and one-half of ground in Somerset, Maryland Peninsula, there were raised this year one hundred barrels of Irish potatoes, which realized the sum of \$400.



# World Mutual Life Insurance Company,

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## LANCASTER REFERENCES:

JACOB BAUSMAN, President Farmers' National Bank. Maj. JAS. E. RICKSECKER, City Treasurer.  
CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank. N. ELLMAKER, Esq., Attorney.  
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Judge A. L. HAYES. Col. WM. L. BEAR, Prothonotary. J. F. LONG & SON, Druggists.

*No farmer is justified in exposing his creditors, his wife, or his children, to the loss certain to occur to them upon his death, without a Life Insurance Policy for their benefit, and in no Company can this be done with more safety and under better management than in the above. See one of their Agents and have him explain all about it.*

\$200.

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HARVEST OF 1869.

**"THE VALLEY CHIEF"**

**A COMBINED SELF-RAKING REAPER AND MOWER.**

After our success in the Harvest of 1868, in pleasing our customers with a neat, light, durable, and a complete Combined Harvester, we again come into the market for the Harvest of 1869 with our VALLEY CHIEF, feeling a great confidence in its superiority.

We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine, is built with an eye to convenience, simplicity and durability. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower, with a first-class Self-Raking Reaper, thus giving our customers a simple, strong and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

**MARSH, GRIER & CO.**

LANCASTER, June 25th, 1868.

EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business.

H. B. PARRY.

## W. M. WHITESIDE, DENTIST,

Office and Residence,

EAST KING STREET,

Next door to the Court House, over Fahnestock's Dry Goods Store,

LANCASTER, PENNA.

*Teeth Extracted without pain by the use of Nitrous Oxide Gas.*

## BOOKS AND STATIONERY.

A Full assortment of

SCHOOL, MISCELLANEOUS, AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

## STATIONERY,

WHICH WILL BE SOLD AT

**GREATLY REDUCED PRICES,**

On account of removal April 1st, 1869, to

No. 52 North Queen Street,

(KRAMP'S BUILDING)

Four Doors above Orange Street.

Subscriptions received for all the Agricultural and Horticultural Magazines.

J. H. SHEAFFER'S

Cheap Cash Book Store, No. 52 N. Queen Street, LANCASTER, PA.

## Dr. N. B. BRISBINE,

No. 93 EAST KING STREET, ABOVE LIME.

The Doctor pays special attention to all old obstinate diseases, such as Consumption, Liver Complaint, Dyspepsia, Rheumatism, all diseases of the Heart, Head, Throat, Lungs, Stomach, Bowels, Kidneys, Nervous Debility, General Debility, &c. The doctor makes examinations of the Urine. Consultation Free.

## S. WELCHENS, D. D. S., SURGEON DENTIST,

Office and Residence,

HOWELL'S BUILDING, No. 65½ NORTH QUEEN ST.,

Half a square south of the R. R. Depot.

Twenty Years' Successful Practice in Lancaster

The Latest improvements in INSTRUMENTS and TEETH and the very best material, Warranted in all operations.

TEETH EXTRACTED WITHOUT PAIN with the use of Nitrous Oxide Gas, Ether, or the Ether Spray.

TERMS, as low as any in the city, when low priced material and low priced work are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

S. WELCHENS, D. D. S.

## THOS. J. WENTZ,

SUCCESSOR TO

WENTZ BROTHERS,

SIGN OF THE BEE HIVE,

No. 5 EAST KING STREET, LANCASTER, PENN'A.,

DEALER IN

FOREIGN AND DOMESTIC DRY GOODS,

GLASS AND QUEENSWARE,

Carpets, Oil Cloths, Window Shades.

SPECIAL ATTENTION PAID TO

LADIES' DRESS GOODS

Shawls and Embroideries, Cloths and Cassimeres, Handkerchiefs, Gloves and Hosiery, Best Kid Gloves.

**New Goods Received Daily!**

The Choicest of the Market, and at the Lowest Possible Prices.

REMEMBER THE PLACE TO BUY.

THOS. J. WENTZ,

Bee Hive Store, No. 5 E. King St.

## G. J. GILLESPIE,

DEALER IN

FOREIGN AND AMERICAN WATCHES,

IN GOLD AND SILVER CASES,

CLOCKS OF EVERY DESCRIPTION,

Jewelry in all its Shapes and Forms,

SILVER WARE. designed for Bridal Presents; BRACKETS, TOILET SETS, VASES, SPECTACLES, GOLD PENS, &c., &c., &c. No. 10½ West King Street, opposite the Cross Keys Hotel LANCASTER, PA.

# HARDWARE!

## Stoves!

## Cedarware!

## Housekeepers' Furnishing Goods!

The undersigned at their old established stand in  
**WEST KING STREET,**

are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

**The Largest and Best Selected Lot of**

### STOVES,

at Manufacturers' Prices. Also, every other article kept in a first-class Hardware Store.

**A FULL STOCK OF**

Sadlers', Coachmakers' and Blacksmiths' Tools and Materials.

BUILDERS will find a full supply of every thing suited to their wants at **LOWEST FIGURES.**

**CLOVER, TIMOTHY AND FLAX SEED,**  
BOUGHT AND SOLD.

### STEINMAN & CO.

P. E. GRUGER.

J. P. GRUGER.

**GRUGER BROTHERS,**

## MARBLE MASONS,

**14 South Queen St., Lancaster, Pa.,**

Have always on hand or will furnish to order at  
**SHORT NOTICE,**

### MONUMENTS,

**TOMBES,**

**GRAVE STONES,**

**&c., &c.**

We pay particular and personal attention both to the **SELECTION OF THE MATERIAL** and the **EXECUTION OF OUR WORK,** and our facilities now are such that we can guarantee our customers the very best work, at the same, and often Lower Prices, than are usually paid elsewhere for inferior productions.

**Lettering**

**in**

**English**

**and**

**German,**

**ELEGANTLY AND CORRECTLY DONE.**

We earnestly invite our country friends to give us a call.

# SHULTZ & BRO.

Manufacturers, Wholesale and Retail Dealers in

## HATS,

## Caps and Furs,

## LADIES' FANCY FURS,

## HOODS,

## TRIMMED GLOVES AND MITTS,

## Gents' Gloves, Capes and Collars,

## Fancy Robes,

## BLANKETS, &C.

**20 North Queen Street,**

**LANCASTER, PA.**

## AMERICAN WATCHES



## H. Z. RHODES & BRO.,

*No. 22 West King Street,*

**NEXT DOOR BELOW COOPER'S HOTEL,**

### LANCASTER, PA.

**DEALERS IN**

## AMERICAN & IMPORTED

## WATCHES,

## SILVERWARE,

## JEWELRY.

## CLOCKS AND SPECTAGLES.

# LIFE INSURANCE AGENCY!!

THE UNDERSIGNED REPRESENTS THE

## BROOKLYN LIFE INSURANCE COMPANY,

AND ALSO THE

## NORTH AMERICAN

## Life and Accident Insurance Company,

Both stable and well established companies, the former having a capital of \$1,000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

All desirous of securing insurance upon their lives can do so by calling upon the undersigned.

**ALLEN GUTHRIE, Agt.,**

East Lemon Street,

LANCASTER, PA.

## REED, M'GRANN & CO.,

**BANKERS,**

LANCASTER, PENNA.

Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

Sell Bills of Exchange on Europe and Passage Certificates.

Receive Money on Deposit and pay Interest as follows:

1 month,	4 per cent.,	6 months,	5 per cent.
3 " "	4½ " "	12 " "	5½ " "

**FOR SALE AT**

Chas. A. Heinitsh's Drug Store, 13 E. King St., LANCASTER, PENNA.,

## German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

**GERMAN VEGETABLE OR UNRIVALLED CONDITION POWDERS**

For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hidebound, Loss of Appetite, &c.

**PERSIAN INSECT POWDER.**

A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

**PYROLIGNEOUS ACID.**

A substitute for curing Beef, Pork, Hams, Tongues, Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

## CHARLES T. COULD,

### CHAIR MANUFACTURER,

No. 37 North Queen St., Lancaster,

(NEXT DOOR TO SHOBER'S HOTEL.)

### Old Chairs Re-painted and Repaired.

## CHRISTIAN WIDMYER,

### CABINET MAKER,

S. E. Cor. East King & Duke Sts., Lancaster.

Cabinet Work of every description and a full assortment of Chairs constantly on hand.

*All Warranted as Represented.*

## JACOB ROTHARMEL,

PREMIUM

### BRUSH MANUFACTURER,

DEALER IN

### Combs and Fancy Articles,

No. 9½ North Queen Street, Lancaster, Pa.

## CRUCER & RICE,

### DRUGGISTS & APOTHECARIES,

No. 13 WEST KING STREET,

NEXT DOOR TO STEINMAN'S HARDWARE STORE.

Lancaster, Pa.

Have always on hand Pure, Reliable Drugs and Medicines, Chemicals, Spices, Perfumery and Toilet Articles. Also Flavoring Extracts of their own Manufacture, and of unsurpassed quality.

Sole Agents for HASSON'S COMPOUND SYRUP OF TAR, the best Cough Medicine in the market. We have also on hand in season an assortment of Landreth's Warranted Garden Seeds.

The public can rely upon ALWAYS GETTING WHAT THEY ASK FOR AND NO SUBSTITUTES.

## GEO. F. ROTH,

### UNDERTAKER,

Corner South Queen and Vine Streets,  
LANCASTER, PA.

Coffins of all sizes always on hand, and furnished at Shortest Notice.

THE

# Lancaster Inquirer

Book, Job and Newspaper

## PRINTING ESTABLISHMENT,

LANCASTER, PA.,

### OFFERS GREATER INDUCEMENTS

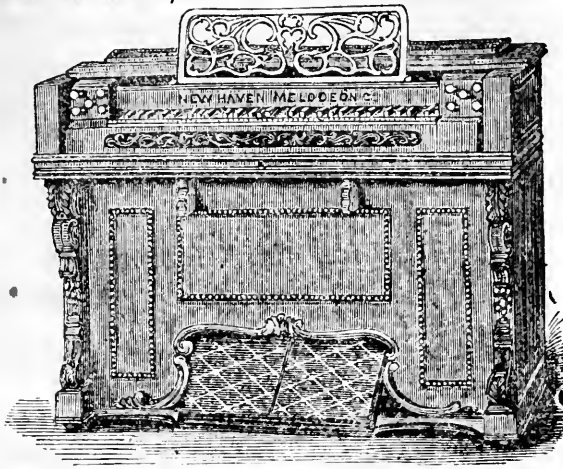
### FOR CHEAP WORK,

*Executed in the Best Style of Printing than any other office in the State.*

**"THE BEST THE CHEAPEST!"**

**"A ROUND, FULL RICH TONE!"**

FLUTO,  
MELODIA,  
BASSOON,  
BOURDON,  
MANUEL-BASS,  
EOLEON-FORTE,  
KNEE-TREMOLO.



PICCOLO,  
GAMBU,  
CLARIONET,  
EOLEON,  
OCTAVES,  
PICCOLO-FORTE,  
KNEE-SWELL.

**"THE TEMPLE ORGAN"**

Is acknowledged by all who have examined it to be the most perfect Reed instrument ever introduced to the public, having been awarded the FIRST PRIZE, over all competitors, "for quality of tone and promptness of action." **IT COMBINES ALL RECENT IMPROVEMENTS,** and for POWER, FULLNESS PURITY OF TONE, AND QUICK RESPONSE TO THE TOUCH, surpasses all others in its close resemblance to the Pipe Organ. **Its Construction is entirely New,** and different from all other Reed Organs now in use, surpassing all in simplicity and equal to any in durability. The editor of the "TEMPLE OF MUSIC" says:

"It is a most magnificent instrument, and has many fine qualities to recommend it; among others, its stops, imitating most successfully many of the most useful in the pipe organ. The flute, the Piccolo, bassoon, clarionet and various others, are such perfect imitations that it would be difficult to distinguish them from the genuine at a little distance from the performer. We have for a long time seen the necessity for a reed organ that combined the qualities which we believe are contained in this; and we invite the severest criticism, not only as to its superior excellence as a musical instrument, but also as to its elegant finish, making it the most beautiful parlor instrument extant."

All the various styles for Church, Hall and Parlor, furnished to order, at manufacturers' prices, by their Agent,

**J. M. W. GEIST,**

No. 70 East King St., Lancaster, Pa.,

where the Organ may be seen, and details as to styles and prices obtained.

**MILLER & SMITH'S**

STANDARD

**SUPER PHOSPHATE OF LIME,**

THE GREAT FERTILIZER OF ALL CROPS,

MANUFACTURED FROM BONES, DISSOLVED IN SULPHURIC ACID. WARRANTED PERFECTLY FREE FROM ADULTERATION.

Our new Circular containing much valuable information, will be furnished free on application to

**MILLER & SMITH, Sole Manufacturers & Proprietors,**  
AGRICULTURAL CHEMICAL WORKS,

Office No. 8 South 5th St.,

READING, PA.

**The Best Work! The Lowest Prices!!**

**A. SCHINDLER & BROTHER,**

No. 76 North Queen St Lancaster, Pa.

Gilders and Manufacturers of Looking Glasses, (Mantel, Pier Glasses, etc.,) and Picture Frames of all kinds. Dealers in Chromo Lithographs, Steel Engravings and Water Color Paintings.

Gilt, Rosewood, and Walnut Frames of every description, and Square and Rustic. Room Mouldings, Cornices, etc., always on hand or made to order.

Also, Re-Gilding, repairing and inserting of Looking Glasses, etc., etc.

# THE FLORENCE SEWING MACHINES.

**THE BEST MACHINE FOR FAMILY USE.**

SIMPLE AND EASY TO LEARN AND NOT LIABLE TO GET OUT OF ORDER.

Capable of all varieties of sewing from the finest to the coarsest. Make the Lock Stitch alike on both sides, and use the least thread.

**W. F. DUNCAN, Agent,**

No. 65 NORTH QUEEN STREET, LANCASTER, PA.

## REGISTER OF WILLS.

We are authorized to announce that

**DR. WILLIAM M. WHITESIDE,**

late Lieutenant of Company E, 10th Regiment, first three months service, and Captain of Company I, 79th Regiment Penna. Volunteers of Lancaster, is a candidate for REGISTER of Lancaster county, subject to the decision of the Republican votes at the ensuing Primary Election.

### CARD!

**REIGART'S OLD WINE STORE,**

ESTABLISHED IN 1785,

No. 26 EAST KING ST., LANCASTER, PENNA.

The reputation of REIGART'S OLD WINE AND BRANDIES for purity and excellent quality having been fully established for nearly a century, we regret that the conduct of some unprincipled dealers, who re-fill with and sell from our labled bottles their deleterious compounds, compels us to adopt the amixed trade mark, which in future, for the protection of ourselves and our customers, will be found on all our old bottled Wines, Brandies, Gins, Whiskies, Bitters, &c.



TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent* of the Act of Assembly, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

H. E. SLAYMAKER, Agt.

### LANCASTER

**UNION SPOKE AND AGRICULTURAL WORKS**

Corner of Water and Lemon Sts.,

Formerly Shirk & Royer's Warehouse, on the Penna. Railroad, near Baumgardner's coal yard, and 2 squares west from the Railroad Depot, where we manufacture the

**LATEST IMPROVED GRAIN DRILLS.**

Also, Grain Drills with Guano attached, warranted to give satisfaction. *Rockaway Fans, Cedar Mills, Crushers and Graters*, for horse or hand power, which will grind a bushel of apples per minute by horse power, and are warranted to do it well. We would also inform Coachmakers that we have put up in our shop two of the latest improved *Spoke Machines, or Lathes*, and are fully prepared to furnish the best quality of SPOKES of all kinds, sizes, dry or part dry, and warranted to be a good article. We buy none but the best turned Spokes, and have now on hand **100,000 SPOKES**. BENT FELLOES of all sizes; SHAFTS and CARRIAGE POLES, Bows, &c., of reasonable stuff, constantly on hand.

As Mr. Keeler has been in this business 16 or 18 years, and having served an apprenticeship at Coachmaking, he knows what the trade want in that line. All kinds of Bent Stuff for sale, or made to order—and Spokes of all sizes turned for persons having them on hand in the rough.

NOTICE TO FARMERS AND MECHANICS.—Planing and Sawing done at the shortest notice. We have one of the best and latest Improved Surface Planes for operation.

**KEELER & SHAEFFER, Lancaster, Pa.**

## ZAHM & JACKSON,

No. 15 NORTH QUEEN ST.,

Beg leave to call the attention of persons in want of a good and reliable Time Keeper to their full assortment of

### AMERICAN AND SWISS WATCHES,

In Gold and Silver Cases which will be sold at prices which will defy competition. Also, a full assortment of

### CLOCKS,

of all kinds, which we will warrant good and correct time-keepers.

### JEWELRY

in great variety, such as Pins, Setts, Ear Rings, Finger Rings, Sleeve Buttons, Chains, &c.

### SOLID SILVER WARE,

Manufactured expressly for our sales and warranted coin.

### PLATED WARE,

From the best factories and warranted the finest quality.

Gold, Silver and Steel Spectacles. Hair Jewelry  
Made to Order.

Repairing Promptly Attended to.

ZAHM & JACKSON.



# LANDIS & CO., KEYSTONE AGRICULTURAL WORKS

James Street, Lancaster, Pa.,

ARE PREPARED TO DO ALL KINDS OF

## MACHINE WORK,

BUILD LARGE AND SMALL ENGINES,

SHAFTING, PULLEYS, HANGERS, HORSE & WATER-POWERS,

MILL GEARING,

And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

## LARGE ASSORTMENT OF MACHINERY

Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works, in which the best work is turned out.

They also announce that they are now prepared to supply their

## NEW GRAIN SEPARATOR

### TO ALL CUSTOMERS.

This Machine requires LESS POWER, does MORE WORK, and is considerable CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

## Gas and Steam Fittings,

Made to order on a new set of STANDARD DIES.

Repairing of all kinds promptly done at reasonable rates.

Give us a call, and we will endeavor to please our patrons.

FRANK LANDIS,  
EZRA F. LANDIS,  
JACOB LANDIS.

# Diller & Groff's Hardware Store,

**SIGN OF THE ANVIL.**

No. 8 East King Street, Lancaster City, Penna.

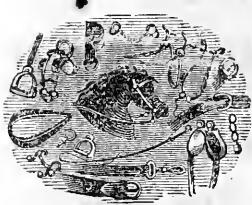
DEALERS IN

Foreign and Domestic Hardware,

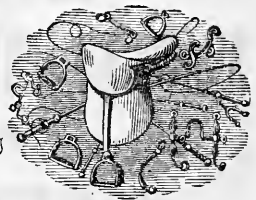
Such as Building Material, Paints, Varnishes, Oils, Glass, Coach Trimmings, Stoves,  
Iron and Steel, &c., &c., &c.

**HOUSE FURNISHING GOODS.**

TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



## AMOS MILEY'S HARNES MANUFACTORY,



No. 37 North Queen St.,

NEXT DOOR TO SHOBER'S HOTEL, LANCASTER, PA.

### SADDLES AND BRIDLES,

PLAIN AND FANCY

### COACH, BUGGY & CART HARNES,

WAGON GEARS, WHIPS, BUFFALO ROBES,

BLANKETS, TRUNKS, VALISES, CARPET BAGS, LADIES' & GENTS' SATCHELS,

Of all kinds constantly kept on hand or made to order. Repairing neatly done.

Also, Agent for **BAKER'S HOOF LINIMENT**, the best article for Sore Hoofs in the country.

## J. M. WESTHAEFFER,

### BOOKS, STATIONERY, FANCY GOODS, &c., &c.,

44, Corner North Queen and Orange Streets,

LANCASTER, PA.

N: B.—Any Book ordered can be sent by Mail to any address.

# TO BUILDERS!

# PLASTIC SLATE!!

## The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

### LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimonials New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built; stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
7. The testimony of Wm. M'Gilvray & Co., published herewith, shows that it is not only fire-proof externally, but, is also a great hindrance to the spread of fire within.
8. It is much cheaper in first-cost than any good roofing now in use, and when all attendant expenses of the two roofs are estimated, costs only about half as much as the best slate, and it makes a better and closer roof.
9. For the roofing of foundries and casting-houses of blast furnaces, where there are gases of a very high temperature, which injures and destroys other roofs, this material is improved and seems to produce a better roof, (see certificates of Messrs. Grubb, Musselman & Watts, S. M. Brua and Wm. M'Gilvray.)
10. If in process of years cracks or leaks occur in Plastic Slate Roofs, they are about as easily repaired, as they would be to white-wash, needing only a brush and the Mastix, but no expensive labor of mechanics.

☞ The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Office of the Lancaster INQUIRER or EXAMINER & HERALD.

Persons wishing to examine PLASTIC SLATE ROOFS, and thus verify for themselves the following statements, are invited to call and inspect Roofs put on for the following persons, among many others:

LANCASTER—Thos. H. Burrowes, Stuart A. Wylie, (Editor Lancaster Inquirer,) J. B. Schwartzwelder, Abraham Bitner Sr. MARIETTA—Henry Musselman & Sons., Myers and Benson. COLUMBIA—C. B. Grubb, (Furnace,) Columbia Gas Co., Samuel Shock, Pres't., Susquehanna Iron Company, Wm. Patton, Pres't., Samuel W. Miffin. MOUNT JOY—Henry Kurtz, Dr. J. L. Ziegler, William Brady, J. R. Hoffer, (Editor Mt. Joy Herald). CHRISTIANA—E. G. Boomell, Wm. P. Brinton, John G. Fogle. BART—William Whitson. BELLEMONTE P. O.—Robert P. McIlvaine. PARADISE—Robert S. McIlvaine, WILLIAMSTOWN—T. Scott Woods. EPHRATA—Dr. J. M. Groff. GORDONVILLE—Samuel M. Brua. CERNARVON TWP.—Mrs. Fanny Mast. UPPER LEACOCK TWP.—Marks G. Menger, Christian R. Landis, Jacob R. Musser. LEACOCK TWP.—Isaac Bair, Levi Zook. WEST EARL—Christian Beiler. LEAMAN PLACE—Henry Leaman, Israel Rohrer. BRUNNEVILLE—Aaron H. Brubaker. SPORTING HILL—Emanuel Long. LITIZ—H. H. Tshudy, David Bricker. DORLACH P. O., CLAY TWP.—Jonas Laber. MANHEIM BOR.—Nathan Werley, Samuel Ruhl. PENN TWP.—George Ruhl. WEST LAMPETER—Aldus C. Herr. ENTERPRISE P. O., EAST LAMPETER—Mark P. Cooper. STRASBURG BOR.—Hervey Brackbill.

Orders for Roofing Should be sent to

**Joseph Gibbons,**

LICENSE FOR LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

Enterprise P. O., Lancaster County, Pa.

Or A. W. & J. R. RUSSELL, Lancaster, Pa.

Or MOSES LIGHT, Manheim, Lancaster county, Pa.

Or JOHN R. BRICKER, Litiz, Lancaster county, Pa.

ALDUS C. HERR, Lampeter, Lancaster county, Pa.

# THE GREAT AMERICAN COMBINATION

Button Hole, Overseaming

AND

# SEWING MACHINE!

Is warranted to execute in the best manner, every variety of

SEWING, HEMMING, FELLING, CORDING, TUCKING, BRAIDING, GATHERING, QUILTING, OVERSEAMING, EMBROIDERING ON THE EDGE,

IT HAS NO EQUAL



And in addition makes beautiful Button and Eyelet Holes in all fabrics, being absolutely the best FAMILY MACHINE in the world, and intrinsically the Cheapest, for it is two Machines combined in one by a simple and beautiful Mechanical Arrangement. This is, in fact, the only new machine in the market that embodies any substantial improvement upon the many old machines that are being forced upon the public.

Circulars with full particulars and samples of work done on this Machine, can be had on application at the

Sales Rooms of the Company,

**S. W. Cor. 11th and Chestnut Sts., PHILADELPHIA.**

Instructions given on the Machine gratuitously to purchasers.

AGENTS WANTED TO SELL THIS MACHINE.

aug '69-1y

**A. B. KAUFMAN'S**  
**INSURANCE AGENCY,**  
 No. 1 EAST ORANGE ST.,  
 LANCASTER CITY, PA.,

Issues Life, and also, Policies against Fire and all other Accidents.

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# LANCASTER FARMER

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE INTERNAL GROWTH OF THE PLANT.

While settling the organs of the vegetable, their functions, and the various tissues which form the structure of the plant, our articles heretofore may have been somewhat prosy and uninteresting to the casual reader. We have, from the start, felt this difficulty; but it is almost impossible to point out those peculiarities and principles in an intelligent way, without holding the mind of the reader to some scientific rules. If we would study organic life, we must know what an organ is. We must also understand the import of a function, and bear in mind those nice little distinctions in regard to the cells, the difference between cells which form the woody tissue, and those which form what is known as cellular tissue, or that which forms the bark of the tree, and parenchyma or body of the vegetable. These points we have been endeavoring to develop, and now taking it for granted that all our readers have understood them as we passed along, we will treat the balance of our subject in a more practical manner.

One of the things most common and familiar to us all is *growth*. We are rarely able to see things

growing, and yet we know that there is growth and enlargement continually all around us. In a mechanical and artistic way, we can see things growing larger, as piece after piece, and particle after particle are attached to each other. But the growth of an organic fabric is fraught with mystery to those who do not take the trouble to examine its philosophy, or, in other words, to think much about it.

Go into one of our cotton factories, and observe the manner in which the fabric there is made to grow, and you have an illustration, at once, of the whole mystery. Living tissue everywhere is formed upon the same principle, though by no means with the same appliances or the same conditions. You will there see threads stretched length-wise, which are called the *warp*, and then other threads thrown cross-wise by the shuttle, which are called the *woof*. This inter-twining or inter-lapping process, whether natural or artificial, is the whole story.

Now, in applying those principles to the growth of vegetation, we must bear in mind the *fact* that we previously learned, namely, that there are two kinds of cells, forming two distinct kinds of tissue, and the intertwining, as it were, of those cells with each other, constitutes the growth of the fabric. The woody tissue forming the *warp*, and the cellular tissue the *woof*.

The wisdom of this provision of nature will be apparent if we reflect upon the nature and position of the plant. The woody fibre being of a hard and unyielding nature, is well adapted to the *perpendicular system*, and elongates as the growth advances. It does not at once harden into a dense substance, but as the cell-function proceeds, and the softer tissue is introduced, vertically, to help to increase the stem in length, and horizontally to increase it in diameter, there is a condensing process, in which both the tissues receive strength sufficient to sustain the upright position of the plant.

In weaving a piece of carpet or cloth, we speak of the chain and the filling, and all seem to understand their uses in the construction of the fabric. That which builds up, and causes the enlargement here, however, is a structure previously pre-

pared for the purpose, and in its artistic use it creates the body, not by a living process, but by the layer of one strata upon the other in a mechanical way, and with the use of an inert substance. The fabric is thus made to grow, and the enlargement is perceptible, because it is mechanical.

But, in the growth of nature, the conditions and appliances are of such a complicated character, and the execution is so gradual and complete, that the *result alone* is perceptible, whilst the process is hidden beneath a maze of impenetrable mystery.

We can speculate upon the subject, and, by the application of the laws of science, we can picture to the imagination, even the process by which nature does her work. But the endowment which moves this magnificent machinery, as the weaver would his loom, can only be explained by the terms so familiar to us all, namely, *vital energy*.

We have compared this process of growth to the weaving of a fabric upon a loom. Now, with this figure before us, let us follow up the process of enlargement in the organic structure, and we will be able, perhaps, to form an idea of its nature and character, whether we understand its vital principle or not.

The cells which form the woody tissue, in consequence of the eventual hardness of their texture, must be allowed to take the lead, and shoot forward and upward to constitute the skeleton, or *warp*, to be filled in by the cells which form the softer tissue, and eventuate in the parenchyma or fatty substance of the plant, the bark of the tree, and the green substance of the leaves. There is now an inter-twining or weaving operation of those cells, as they elongate, and form one upon the other. But there is no steam-engine or hand-loom to propel the operation. *It is life*, and, instead of the filling being an inert substance, each little cell-bubble propagates a brood of others, and the vital principle which pervades the whole mass works up the fabric by virtue of the function those living cells perform.

Those functions are appropriation and assimilation. The elements which are carried from one cell to the other by the absorption of the sap, as it comes up laden with the various compounds designed to nourish every species of tissue, are respectively appropriated to this cell for the formation of *cellular tissue*,—to that cell, for the formation of *wood tissue*.

This function of appropriation then being performed, digestion or assimilation must next follow, after which the tissue gradually hardens as the nature and character of the plant may require

This growth is governed by fixed laws, which

confine the development to size and species, and it takes whatever direction the forces of vegetation require, whether in the blade or grass, or the tree, which is almost a forest in itself.

We have now two systems. The woody tissue just referred to, composing what is termed the "fibre or vertical system." And the cellular tissue forming the "*cellular system*." There are accordingly diversities in the internal structure of the various vegetable growths, arising from the different modes by which these two systems are imbedded within each other.

"These diversities are reducible to two general plans, upon one or the other of which the stems of all Flowering Plants are constructed. Not only is the difference in structure quite striking, especially in all stems more than a year old, but it is manifested in the whole vegetation of the two kinds of plants, and indicates the division of Phænogamous plants into two great classes, recognizable by every eye; which, in their fully developed forms, may be represented, one by the Oak and other trees of our climate; the other by the Palm. "The difference between the two, as to the structure of their stem, is briefly and simply this: In the first, the woody system is deposited in *annual concentric layers* between a *central pith* and an exterior bark, so that a cross-section presents a series of rings, or circles of wood, surrounding each other and a distinct pith, and all surrounded by a separable bark. This is the plan not only of the Oak, but of all the trees and shrubs of the colder climates. In the second, the woody system is not deposited in layers, but consists of separate bundles or threads of woody fibre, running through the cellular system without apparent order, and presenting on the cross-section a view of the divided ends of these threads in the form of dots, diffused through the whole, but with no distinct pith, and no bark which is at any time readily separable from the wood." The Cane or Rattan, the Bamboo, of the tropics, and the stalk of the Indian Corn, and Asparagus, of our climate, will present an idea of the latter. The former is technically termed "*exogenous structures*," and the latter, "*endogenous structures*;" or plainly rendered, *outside-growers*, and *inside-growers*.

Now the systems above referred to, are the same in both these structures; but the mode of development varies with the character of the plant, and the peculiarities of climate. The "*Exogens*" in their conformation and general characteristics, are especially adapted to the changes of the colder climate, whilst the "*Endogens*" are incapable of withstanding such congealing blasts,



but in texture and quality are rendered peculiar to the tropics.

Now the beauty and wisdom by which these evolutions are carried forward in the vegetable kingdom, especially in the higher orders of this life, should commend the study of them to every one who makes their cultivation a pursuit.

It is a poor compensation to the mind, to be able simply to propagate, and by applying the conditions of growth to develop the plant; even though you understand its habits, and can botanically call them by name, if the internal workings of this verdure and life which is scattered abroad upon the face of the earth, remains a sealed up mystery, and nothing can be seen or understood but results.

For the want of space we have condensed this subject into the smallest possible compass. The most beautiful provisions of nature in the internal growth of the plant, are yet open before us.

To trace the process by which the woody cells are transformed into tissue, and the manner in which the cellular tissue is made to develop the parenchyma, and their life, as kept up by the circulation,—the adaptation of the various forms of growth to the different climates,—the necessity of more woody tissue in one climate than in another, the waste of all of both the systems of which we have been speaking, are all subjects of unbounded interest.

If, however, in our feeble efforts, we have been able but to direct attention to the subject, we will have accomplished something, which, so far as it goes, will be a compensation.

Our next article will be upon the leaf, as an organ of vegetation. S. W.

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## THE TEETH OF STOCK ANIMALS.

### No. II.

The science of comparative anatomy has reached that stage of development in which it can be applied to practical purposes, and be useful not only as a dry prosy theme for professional students, but to distinguish the habits and character of the animal, with but a single bone or tooth. And also, to enable us in some cases to tell the age by certain marks upon the teeth. This is especially true in the case of the horse.

It has long been the habit of those who profess to be able to judge this noble animal, to look into his mouth for evidences of age, which do not show themselves in an outward way. The horse is not, as a general rule, apt to show his age by external marks, such as stiffness of the joints, and that peculiar condition of body which characterizes the decay of nature, and which gives unmis-

takable evidence of the weight of years in every species of the animal kingdom, until he has passed his tenth year. Then all the marks of youth become obliterated, so far as the teeth are concerned, and those of age come apace, in every lineament and movement until his death. The horse rarely lives beyond thirty years. But the average lifetime of his species is scarcely more than half that time.

We propose to give the number of the teeth of the horse, their marks, and the age of the animal at which those marks appear and disappear, and then, in the further treatment of our subject, to give some of his habits, as indicated by those organs.

In his scientific classification, the horse belongs to the family *solidungula*, or single hoofed variety. He has forty teeth. There are twelve of each class, namely, twelve incisors or cutting teeth; twelve bicuspid, or side teeth, and twelve molars, or back grinding teeth, and four canine, or tusks, making forty in all. These are divided, three of each on either side, and in both jaws.

The marks by which his age is known are found upon the incisors, and the canine or tusks. The cause of those marks and their disappearing at a certain age, will be given at another time. In this article we will confine ourselves to the time of coming and their duration, which of course will give the age to those who study the subject, and are expert in determining their characteristics.

The milk teeth of the colt begin to make their appearance when it is about fifteen days old, and they are replaced by the permanent teeth in the following order: At two years and a half the middle ones are replaced. At three and a half the next two follow, and at four and a half, the outermost or corner teeth. This of course takes place in both jaws at the same time, and is confined to the front or incisor teeth. The bicuspid and molars are always permanent. The canine, or tusks, do not always make their appearance in the lower jaw, and are said never to be present in the female. They come, however, when at all, at three and a half years; and in the upper jaw at four. Those of the upper jaw *always come*, whether in the male or female, and at four years of age.

“The incisors are slightly curved, having long, subtrahedral fangs, tapering to their extremity. and closely arranged in the segment of a circle. These teeth, says Mr. Owen, are distinguished from those of all other animals by the fold of enamel which penetrates the body of the crown from its broad, flat summit, like the inverted finger of a glove. This fold encloses a cavity, which presents the form of an island, when the teeth

begin to be worn. This cavity is partly filled by cement, and partly by the discolored substances of the food, and is called the *mark*. This mark is usually obliterated about the sixth year, in the middle incisors, about the seventh year, in the second, and in the third incisors, or corner teeth, about the eighth year, when the animal is no longer marked. They are longer disappearing in the upper jaw than in the lower.

The canine teeth remain pointed until six, and at ten years begin to peel away.

Old horses have dark marks upon the surface of the incisor teeth, but they are more of the character of decay than those just referred to.

S. W.

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## Agricultural.

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### GREEN MANURE.

The growing and plowing down of some vegetable crop while it is yet green and living in order to benefit the soil, is what is termed *green manuring*. This is a manner of adding fertility to the soil, which is no late discovery, having, as we learn from the ancient agricultural writers, Cato, Celsus, and Pliny, been practiced by the Romans in Italy in the earliest periods. Xenophon, the Grecian historian, general and philosopher, advises his countrymen to make use of this species of manurial agency, and details the various herbs and grasses that are best to be sown and plowed down to add the greatest strength to the soil. Indeed it seems strange how this system of recuperating an exhausted soil should ever have been abandoned as it was during the middle ages; yet it, with all the other arts, lay, as it were, submerged by the tide of barbarian aggression and mediæval indolence. With the dawn of learning that illumined the eastern world in the fifteenth century, the arts, like science and literature, again began to elevate their lowered forms, and with the setting in of the sixteenth century this system of fertilizing the soil began to be revived in Flanders the garden of Europe; and green manuring as an agency in the restoration of an impoverished and exhausted soil, has from that period to the present time been steadily practiced and pursued. In the country where the farmer can without difficulty raise regularly, year by year, his 32 bushels of wheat per acre, his 52 bushels of oats, and his 350 bushels of potatoes, there green manuring as a means of restoring nutriment to exhausted lands is perfectly understood and systematically practiced.

The wonder is that the farmers of Lancaster county, who are sounded abroad as the best and

most successful husbandmen of Pennsylvania, should be so slow in introducing a cheap and always at hand system of manuring, and which appears to have given such satisfactory results in other portions of the world. This manner of replenishing the treasury of the earth's bosom, discovered originally by a careful observation of the workings of nature, and by no means excogitated in the deluded brains of chimerical dreamers, is a system having the endorsement of the most skilled and scientific men that this or any other age can boast—one which claims in its favor the world-renowned names of Baron Liebig, Sir Humphrey Davy, and Prof. Voelcker—men whose experiments have done more perhaps for the advancement of agriculture as a science than those of any others who have ever devoted their time to the elucidation of its varied departments.

The philosophy of green manuring is based upon the fact that growing plants derive a large part of their nutrition from the atmosphere as well as from the soil in which they grow, and when the plants are turned beneath the soil and rot, they add to it all the fertilizing ingredients which were furnished them by the atmosphere, and as a consequence leave the soil so much the gainer by this process. Any weeds, grass, or vegetables whatsoever grown upon the ground and plowed under must add to the soil and render it richer than it was before. On this point I quote the language of the celebrated agricultural chemist, Sir Humphrey Davy: "All green succulent plants," says Davy, "contain saccharine or mucilaginous matter, with woody fibre, and readily ferment; they cannot, therefore, if intended for manure, be used too soon after their death. When crops are to be used for enriching the soil, they should be plowed in if possible when in flower, or at the time the flower is beginning to appear, for at that time they contain the largest quantity of easily soluble substances, and their leaves are most active in forming nutritive matter. Green crops, pond weeds, the parings of hedges or ditches, all kind of fresh vegetable matter require no preparation to fit them for manure. The decomposition slowly proceeds beneath the soil, the soluble matters are gradually dissolved, and the slight fermentation that goes on, checked by the want of a free communication of air, tends to render the woody fibre soluble, without occasioning the rapid dissipation of elastic matter. When old pastures are broken up, and made arable, not only has the soil been enriched by the death and slow decay of the plants which have left soluble matters in the soil, but the roots and leaves of the grasses living at the time and occupying so large a part of the surface afford sacchar-

ine, mucilaginous and extractive matters, which become immediately the food of the crop, and the gradual decomposition affords a supply for successive years."—*Agricultural Chemistry*, p. 280.

It is believed that no crop with so little expense would be better for green manuring than corn. Were farmers to plow their ground and sow it with corn, and when it had attained a considerable growth turn the crop under, a great benefit would be derived therefrom. Years ago the writer of this remembers, when a boy, a farmer plowing and sowing with corn about one acre of his field, (which he designed for wheat,) and at harvest time the result was manifestly in favor of the portion where the corn had been sown and plowed under. Farmers, however, generally seem to anticipate that the plowing down of such a crop should be as marked in its results as the application of a heavy coat of barn-yard manure. So much should hardly be expected. If a green manurial crop would do half so much benefit as an ordinary barn-yard manuring, the farmer should be satisfied, and this we think it would accomplish. And this system steadily and regularly pursued would soon enable farmers to bring their land into much better condition than they well otherwise can do. The cost would be but the expense of a couple of bushels of corn per acre, and the small labor of plowing and sowing the crop; and this labor should not be estimated, for farmers often could do this when they had little else to perform. It is to be hoped some of the members of our Society will try this upon some of their ground, and report their results to the Society. In a future article we may treat this subject further, and enumerate the different kinds of vegetables and grasses that are generally used for green manurial purposes.

A. H.

#### LANCASTER COUNTY TOBACCO.

Lancaster county has become the largest tobacco growing county in Pennsylvania. It may not be generally known what an immense amount of tobacco is raised in the county, amounting to several million dollars worth. The heaviest crop is raised in Manor township; next comes West Hempfield, East Donegal, Conoy, East Hempfield, Manheim, Lancaster and Conestoga; and more or less in most of the other townships. Tobacco is very unequal in growth and size in different localities; in some places it has been cut already, while in others it is as yet very small, and will hardly make a good crop. The crop this season is not likely to come up in yield to that of former years. Some of the largest tobacco at the pres-

ent writing, Aug. 9th, is in the vicinity of Catfish, or Oregon, and Petersburg. Much of the tobacco seems to be more or less foxy, and will not likely recover to make a full crop. It may not be generally known that a company of tobacco men, gentlemen from Connecticut, have erected a large tobacco warehouse in Mountville, for the trade.

L. S. R.

#### THE EARLY GOODRICH POTATO.

I shall not make any preference of the early Goodrich or any other kind of potatoes, but leave them all to stand on their good or bad qualities. All potatoes seem to be a mere drug in the market at the present time. Most people prefer the Mercers to all others; but they seem to be nothing again in some localities, and should a wet spell of weather fall in, many other varieties would commence to rot, as it is believed, in like manner. The Goodrich is one of the best varieties, as an early potato, and a good potato for summer and fall use. At this writing (August 7th) the tops of the Goodrich's are all dry, and are ready to be taken up, yielding well. The tops of the early Rose are not quite so dry as the Goodrich, but I have taken some of them up and they yield very well. If they be as good late in the season as at present, they may take the place of the Goodrich. The Mercers, Monitors, and White Peach Blows are green yet in the tops, as well as many other varieties in my neighborhood. Some potatoes will do very well in certain soils, and very bad in others. We ought, therefore, to make experiments with different potatoes in different soils, &c.

L. S. R.

#### CORN CULTURE.

An excellent custom prevails in certain countries in the Eastern States where life Agricultural Societies exist, and one which would, I think, have an excellent effect in this section of country if it were introduced by our Society. The custom to which I refer is this: At a meeting of the Society, a committee of three gentlemen is appointed, whose duty it shall be not to report the names of poor and slovenly farmers, and indifferent cultivators of the soil, but to report the names of those who have the best cultivated farms, the best crops, whose stock is in the best condition, and whose buildings, fences and all else pertaining to the farm, are in good order and indicate thrift.

In traveling through the county, I have observed how differently corn is planted and cultivated. Some plant too thick, and others do not keep the weeds down. I think were such a committee ap-

pointed in our county, they could not but report in favor of Samuel Binkley, of Millport, Warwick township, who has a field in corn containing six acres. It is checkered, only two stalks to the hill; the ground between the stalks is clean of all weeds; most of the stalks have two ears. It is what we might call thorough cultivation, and will make a very large yield from the acre.

S. S. R.

## Horticulture.

### CANADA THISTLE.

This much dreaded pest of the soil seems to continue to fix itself upon not a few farms all over the country, to the great annoyance of farmers generally.

We are not prepared to give our readers a botanical description of it, nor do those who have it on their land, or fear getting it, care. What landholders most care, is, to prevent its getting a foothold on their land, or if already so, how to eradicate it, as it is one of the most formidable weeds known in this State. Every wide-awake farmer will therefore watch it, even at a distance, and hold himself prepared to meet the enemy at the threshold.

The salutary law on our Statute Books, will, we trust, have the effect, not only to prevent its spread, but its ultimate eradication. To believe that it cannot be eradicated after it has become established, is equivalent to surrendering to an enemy without battle. It seems that too many have acted upon this theory herefore, which accounts for the extensive spread which it has already made. The proverb "an ounce of prevention is better than a pound of cure," or even ten pounds, of course, is strongly applicable in this case; but when once established, nothing but unremitting vigilance will exterminate it. Our own success was by destroying the first plants, until no more made their appearance. Others who left it run until established in plots, have destroyed it by covering it with lime, ~~straw~~ or other material that would prevent it from getting daylight. A farm in this county, which some years ago had become very foul with this weed, and sold for about half what it would otherwise have brought, was, by having the thistle continually hoed down for a few seasons, almost completely cleared of it, and is now one of the most valuable farms.

As a preventive it is important to see that it is not brought upon the farm with seeds, hay, straw, manures, &c., and if accidentally scattered, "nip

it in the bud." It is believed that the seed has been carried hundreds of miles in the wool on sheeps backs.

H. M. E.

### RAISING LOCUST TREES.

The question is how to raise them so as to make it pay. I will here give a few observations, to show how some persons are making it pay, and you can proceed as seems proper:

Observation 1st. E. W. says to me, "What do you think those few clusters of locust trees are worth which you see here?"

"Well," says I, "perhaps fifty dollars." (This was before I knew the value of locust.)

Says he, "the post-maker says there will be three hundred dollars worth of posts."

I looked surprised; he thinks it pays.

Observation 2d. I noticed a deep gully on H. L's farm, caused by an old road that used to run through there, but when it was changed to another place he planted it with locust, and now it has a splendid lot of locust fit for posts, only about twenty years old. Does it pay?

Observation 3d. C. H. had a few acres on his farm that was too rocky to farm to advantage. So he set it with locust, and still it was a good pasture for calves, &c. Now part of it has been cut for posts, I should say for the sake of getting a thicker growth of sprouts; and now what a wonderful luxurious growth of sprouts are springing up. I have seen them cut down only a few years after they were planted so as to get more sprouts. It will pay in the end.

Observation 4th. E. H. had considerable rough hill along the edge of Pequea, rocky banks, quarry holes, gullies, &c. Some years ago he planted it with locust, and now there is plenty fit for posts to supply the farm, and it is likewise an ornament to the farm and a good run for stock, &c. Little work and big pay if a person can raise their own plants.

Observation 5th. H. B. always kept a little patch for a locust nursery, raised them from seeds, and whenever he set a new fence, if it was on a bank likely to crumble or wear down through time, he would clean away the old fence, then plough and level off a good position for fence and a row of locust.

He pruned them severely before planting, and set them inside of the fence, and very few failed to grow, and they did not fall or blow over by the soil wearing away from the roots, as I have often seen when they were just stuck on the out edge of the bank. He has also a fine row of locust on each side of his lane from the barn to the road, trimmed up in good style, so as not to interfere with anything. They are an ornament to

his farm, and at the same time making money fast for his children. Do you still ask, will it pay?

Observation 6th. M. P. set a new worm fence some years ago along the road, and planted locust in each angle, so as to form a straight row; now they are pretty well grown, and the fence can't fall or blow over, and when it is worn out the trees will make posts enough to set a new fence and pay for rails and other expenses. He must think it pays, for he still plants on. We say to him, keep advancing, push on, for it is a good investment.

Observation 7th. P. B., when a boy, set three locust trees in front of the old farm-house yard at the road side, (I suppose he did it for ornament, but he might have done worse,) and about twenty-five years afterwards he had them cut, and what a splendid lot of posts they made for the yard and garden fence. They cost but little. Does it pay?

Observation 8th. H. R. set about half a mile of locust immediately after setting a new post fence on the south side of the road, running east and west. A noble plan, as it throws the shade nearly all in the road, a point that should be observed sometimes, so as to cause no harm by the shade. So far, so good. He sold his farm for a good price a few years after, and the present owner does not trim them; now they are very bushy and the limbs are an obstruction in the road; but if they were properly trimmed they would be an ornament and a benefit to the road, and certainly a good deal more valuable to the owner for posts, and I am certain it would pay.

Observation 9th. The Hon. J. S. does not plant very extensively, but what he has planted he keeps trimmed systematically. You don't see a great mass of bushy limbs all along the trunk of the trees. He uses the ladder occasionally, whacking off limbs, &c., only leaving, perhaps, one, two, or three main stems, trimming them out the length of a post or two, as they require it. This throws the whole strength to them, and it makes excellent clean timber very fast. But some persons won't believe that it will pay unless they can almost see the money. We might cite instances of the cash value of prime locust for mechanical purposes, but I have taken up too much room already, and persons might think that I had the small locust trees for sale, which I have not.

Persons should use good judgment both in planting and in trimming, so as to be successful.

J. B. ERB, Beaver Valley.

WHEN a cow or ox gets choked, it is said that immediate relief may be obtained by strapping up a fore leg and compelling the animal to jump, when the obstruction will fly out.

## Botany.

### WEEDS---NO. 6.

MULLEIN, (GERM., *Das Wollkraut*).

The common mullein is considered a naturalized foreigner, although very abundant in all the old settlements. The botanical name of this genus is *verbascum*, an alteration from *barbascum*, on account of the beard (*barba*) with which the leaves and stems are closely covered. Loudon describes thirty-one species out of seventy. In Gray's Botany, three species are described—the common mullein (*verbascum thapsus*), the moth or sleek mullein (*v. blattaria*), and the white mullein (*v. lychnitis*). These three species are found in our county; the two first are common, the latter, *v. lychnitis*, so called because the nap of this and several other species may be used as tinder and to make wicks for lamps, whence the name *lychnitis* applied to one of the species of this genus. This species I only met with in a field near Speedwell forge, and gave specimens to Prof. Porter, who has also given me the credit, on page 591, in the History of Lancaster Co., by J. I. Mombert, in the enumeration of indigenous and naturalized plants found growing in the county.

Although recognized as weeds, and a sure evidence of a slovenly, negligent farmer, who suffers his fields to be over-run with *mulleins*, some species are quite ornamental, and bear many hundreds of magnificent gold colored flowers like the *v. pulverulentum*. In company with S. S. Rathvon and H. L. Zahm on the road to Oregon, this county, we met a specimen of the common mullein, that had quite large and showy flowers, truly beautiful and worthy of the flower garden. Mr. Zahm took a specimen along and planted it in his garden; I do not know what cultivation may yet bring about.

Our other common species, *v. blattaria* (Moth mullein), is said to have the power of driving away the *blatta*, or cockroach. As a genus, they are widely dispersed over Europe, western and central Asia, and northern Africa; the immense number of species described are probably mostly varieties or hybrids. They are tall, erect, strong-growing, mostly biennial herbs. Our common woolly-leaved mullein (*v. thapsus*), or the great mullein, have a mucilaginous bitterish taste, and a decoction of them is employed in domestic practice in catarrh and diarrhoea. They are also used as emollient applications to hard tumors, and in pulmonary complaints in cattle—hence in some



sections it is also called Bullock's Lungwort. The ancient Greeks are said to have used the dried leaves as lamp-wicks, while the Romans, who call the plant *candelaria*, dipped its stalks in suet to burn at funerals. The English name, high-taper or high-taper, appears to allude to a similar use. This was a famous plant with the witches of old, whence it has been sometimes called hag-taper. The young leaves are also recommended as a good substitute for hops.

As the plant produces a vast number of seeds, it can only be kept in subjection by a careful eradication while young, or at least before the fruit is mature. When neglected, the soil soon becomes so full of seeds that the young plants will be found springing up in great numbers for a long succession of years. The other species, quite common in fields and along road-sides, v. *blattaria* or Moth mullein, is so different in the stem and leaves that it would not be recognized as a mullein. The stem is slender and smooth, "the lower leaves petioled, oblong, doubly serrate, sometimes lyre-shaped, the upper partly clasping; racemes loose; filaments all beared with violet wool."—*A. Gray*. The other is so common and well known as to require no description; the name Mullen or *Das Woolkraut* is sufficient, from which the latter, the v. *lichnitis*, differs chiefly in a pyramidal panicle of flowering heads. The plant is clothed with a thin powdery wolliness, stem and branches angled above. Rather rare.

J. S.

## Entomological.

### LOCUST TREE BLIGHT.

My attention has been called, on several occasions, to what is commonly called, and to appearance, what seems to be; a "blight" of the locust trees, in many parts of Lancaster county, the present season. I had noticed this appearance last season still more extensively than it has occurred the present season, up to this time, (Aug. 10,) so far as my observations have been made. These blights are caused by various insect depredations upon the leaves of the trees, and perhaps also from other causes. On the 10th of August of the present year, while passing through a long lane, having a row of fine thrifty young locust trees growing along the one side of it, I had an opportunity of making an examination of them, as many of their branches were brown and crisp, with this supposed blight, and many others rapidly becoming so. I found the immediate cause, on this occasion, to be the feeding of a small coleopterous insect, (*Uroplata suturalis*) be-

longing to the family HISPIDAE, on the upper and lower surface of the leaves. It may seem almost incredible that an insect could possibly be so numerous as to cause all the blight of this kind in Lancaster county. Be that as it may; I am sufficiently satisfied that the afore named insect was the cause of the nineteen-twentieths of what I saw and examined on the occasion alluded to. They were present in thousands, yea, tens of thousands, and all actively engaged in gnawing off the surface of the leaves, on both sides, but whatever side of the leaf is attacked, that seems sufficient to wilt, curl, or turn it brown, in a very few days. I do not think I ever saw this insect so numerous before, in all my entomological experience—indeed, I well remember the time when it was considered comparatively rare, at least in some localities. Dr. Harris says, "in the middle of June," this insect "may be found pairing and laying its eggs on the locust trees." "The grubs appear during the month of July, and are transformed to beetles in the month of August." I found numbers of them pairing on the 10th of August, and therefore, there very probably are two broods in a season, especially in southern Pennsylvania, and localities south of it. It may be otherwise, but it seems to me that the great extent of the damage to the locust trees, can only be accounted for on the hypothesis that there are two broods; our summer season being at least ten days in advance of that of Massachusetts, where Harris wrote, they appear so much earlier here.

The mature beetle varies in length between three-eighths and five-eighths of an inch. The head, *antennæ*, body beneath, and legs, are a jet black. The *thorax* is of an impure or tawny yellow color, deeply and roughly punctured. The wing covers are deeply striated, and punctured in the striations longitudinally, and of the same color as the thorax, except a black line on each side of the *suture*, or central dorsal seam, which widens below the middle, and covers three of the stria on each side, by the time it reaches the apex of the *elytra*. The Hispidans may be easily recognized by their oblong, flattened bodies, short thorax, small head, with the *antennæ* projecting in front, and their rough puncturings and striations.

The *larvæ* are "leaf-miners," and are flattened, whitish, six-footed worms, about a quarter of an inch in length, when mature. They taper gradually from "fore to aft," with serrated projections along each side, marking the segmental divisions. They feed upon the *parenchyma* of the leaf, leaving the skin entire, and in this way they are even more damaging than the mature insect. They



undergo their transformations between the skins of the leaves. I have found the mature insect late in autumn, and also early in the spring, and, therefore, I conclude that they hibernate during the winter, appearing on different kinds of foliage in the end of May and beginning of June, according to the advanced or retarded state of the season.

I found also, on the same trees, and at the same time, (Aug. 10,) a very small, black, pear-shaped curculio, (*Apion sayii*,) eating holes in the leaves; but there were twenty of the *Uroplata* to one of the *Apion*. These last-named insects are said to breed in the seeds of the locust tree. There are also various species of *Micro-Lepidoptera*, the larvæ of which are said to be leaf-miners, and these may also assist in producing the effect upon the foliage of the locust trees we see so extensively in this county. As to an effective remedy for such a wide-spread disease, I confess I can suggest none. I have seen the same effect twenty years ago, and, very likely, after a few years the disease will abate, from some cause beyond our view, and which we usually term "of its own accord." These periods of redundancy and scarcity are as common in the insect crop as they are in other crops.

S. S. R.

### THE MILL BEETLE.

About a month ago Mr. J. O. Steinhauser brought me about twenty specimens of a small, oblong, flattish, black beetle, belonging to the genus *Trogosita*, which, he informed me, was the very bane of millers' bolting-cloths. The complaints of the millers against this insect have been loud and long; for it eats their bolting-cloths into holes, allowing the bran to pass through, and so far, injuring the market quality of the flour, and against which no remedy can be applied without a probability of a further damage to its quality. From what I can learn, all, or nearly all, the mills in this section are infested with this insect; and I have also seen it in corn cribs, granaries, and feed-troughs, in barns and stables. There are at least fifteen species of the genus *Trogosita* known in the United States, eight of which are in my collection, but those I obtained from Mr. S. do not correspond with any of them. I have also one unnamed species from Europe, which seems almost identical. Mr. CURTIS, on page 332 of his "Farm Insects," says that *Trogosita mauritanica* which infests barn and granaries, "has evidently been introduced from the shores of Africa, in which country it is abundant, as well as in America, and has now spread itself over the continent of Europe." It is very probable, therefore, that *mauritanica* is the com-

mon species that so generally infests the mills, barns, and granaries, in this country. It is said also to attack dead trees, "and even bread and nuts." I have myself often found a species of *Trogosita* in ground nuts and English walnuts. On one occasion a cargo of loose corn, which arrived at Marietta, while I resided there, from the interior of Pennsylvania, was so badly infested that the whole cargo had to be run through a screen, and among these screenings a bushel of these insects could easily have been collected. On another occasion, on the Glatz farm, opposite Marietta, whilst they were cleaning wheat in the barn, quarts of these insects, and the black weevil (*sitophilus granarius*), could have been collected. It is therefore very common, but common as it is, there does not seem to be much known about the larva and its habits as identified with the imago, I have found a larvæ in mills where I found the beetle, corresponding with the following description from CURTIS.

The larvæ are, however, well known in the south of France, where they are called *Cadelle*, and are particularly destructive, because they injure much more than they consume. Mr. Curtis says: "When full grown the larva is eight lines in length, and one in breadth; the body is whitish, composed of twelve segments, distinct enough and rough, with short scattered hairs; the head is hard, scaly, black, and furnished with curved, sharp, horny jaws; the three thoracic segments of the body bear each a pair of short, scaly legs, and a pair of obscure dorsal spots; the anal segment is terminated by two very, horny hooks. They enter the earth, or bury themselves in dust, to become pupæ, of which I have no description." My friend Mr. Stauffer informs me that a miller from Rapho, in this county, on several occasions, brought him a large number of small, whitish larvæ with black heads, which he took from a conducting trough in his mill, which he said sometimes become so numerous as to impair the quality of the flour. This trough or box is square, horizontal, and has a revolving screw passing through it, and is part of the apparatus used in a mill for conveying the grist from the grinding room to the bolting-room. Along the two lower angles of this trough the grist or flour remains, and here is where these grubs remain and feed. It is only after they become beetles, it appears, that they commence gnawing the bolting-cloth. A plan has been suggested to make these troughs cylindrical instead of a square box, and then there would be no corners for the insect to harbor in; for if the harbor of the larva is destroyed, the disappearance of the beetle itself might be expected to follow. The insects Mr. Steinhauser

brought me are of half a dozen different sizes, varying from one-fourth of an inch in length, to one-half of an inch, and from one-sixteenth to one-eighth of an inch broad; depressed or flat-tish; of a pitchy color, with a chestnut shade; head and thorax irregularly and deeply punctured, and the *elytra*, or wing-covers, puncto-striate, that is, lined and punctured in the lines; antennæ short and clavate; head broad, and furnished with a pair of strong, black, bifid jaws. The thorax is somewhat broader than the head, and the *elytra* are broader than the thorax, from which they are separated by a narrow neck, and about three times as long; legs stout and short, the anterior pair the stoutest, showing their burrowing proclivities. This insect is said to be also carnivorous, destroying, in its perfect state, the larva of the grain moth (*Tinea granella*) in Europe. But when and where the female deposits her eggs, is not yet known there, or was not, when Mr. Curtis wrote, in 1860.

The species are very much alike, and are exceedingly difficult to determine, especially as the same species vary so much in size. It is probable that the species under consideration may be different from the species Mr. C. describes as *mauritanica*, for it seems to be larger. He says a Mr. Kirkup bred the beetle from a Spanish almond, in which it lived as a larva for fifteen months, after which, it remained alive as a beetle for twenty-one months, making a period of three years, to say nothing about how old it was when he first obtained it. The fact of the larva having been found in an almond, and the perfect insect in nuts with the shell entire, leads to the inference that the eggs must, at some period, have been deposited there. But if the imago is carnivorous, what can it find in a dry cotton bolting-cloth to excite its carnivorous appetite? Moreover, if Mr. Kirkup's experience is a correct representation of their longevity, it is not very encouraging to millers. There is some difficulty in finding an expressive common name for this insect, for there are other species which infest mills, one of which is the "meal-worm," or the "mealworm-beetle," (*Tenebrio Molitor*) which is also an imported species. The "Bolting-cloth Beetle," would perhaps be better, although longer. Under any circumstances, common names alone are unsafe guides, from the fact that half a dozen different localities may have half a dozen different names for the same insect, but what leads to the greatest confusion, is the applications of a common name to a particular species in one locality, and the same name to a different species in another locality. I trust, from the foregoing remarks, millers may be led to discover more of the habits of this insect, and also a remedy for its destruction, or prevention. S. S. R.

## Editorial.

### CATTLE RAISING.

I propose to submit a few reflections as indicating my thoughts on the subject which heads this article, one as I conceive, of as much practical utility as any that could be discussed in the columns of the LANCASTER FARMER. The subject has been somewhat broached in previous numbers of our journal, and I throw out some additional ideas, hoping to elicit a fuller expression of sentiment on this topic from some of our practical and scientific gentlemen, readers of the FARMER.

Next to the growing of the cereals do I regard that of the raising of all kinds of live stock as holding position, and an interest of husbandry that by no means should be lost sight of by those who desire to be ranked as systematic farmers. It is not the exclusive raising of stock that is here urged upon the attention of our readers, for as we shall endeavor to point out, that would not be profitable in this section of country. From the known habits and customs of our people, it is apparent that most owners and cultivators of farms in Lancaster county and this section of Pennsylvania, raise more or less stock of one kind or another, influenced by motives of various kinds. The cow is regarded as an indispensable appendage of the farm and household; and he would be regarded as a thriftless farmer, indeed, who would not have his farm-yard stocked with cattle of one kind or another. Again, one farmer may be struck with the beauty of a heifer calf, and he is induced by its appearance to raise it for a milk cow, thinking at the same time, that home-raised cows are the most tame and gentle to the milker. Another farmer may be struck with the beauty of a first class bull, and he raises it. Many raise a greater than ordinary number of cattle on their farms, without calculating whether it be profitable or otherwise. Thus the farms in our agricultural communities are from various motives stocked with cattle, and little or no attention bestowed upon the kind of cattle that are so raised. Would not the objects of our farmers be better attained if, instead of indolently clinging to the old breeds, they would look around and learn the kinds of cattle that far surpass the old breeds and stock their farms therewith?

Of the new kinds of cattle whose reputation at this time seems to lead all others, may be mentioned the Alderney and Durham. The Alderney is at this time, as will be perceived by every attentive reader of our agricultural journals, attracting almost universal attention. We have just

learned of a gentleman in the city of Lancaster who is stocking his farm at great expense with this new kind of cattle. The raising of the best grades of cattle costs no more than the growing of the poorest, and when this is the case why is it that a little effort is not made to secure the superior kinds? It is like paying a trifle extra for a new variety of wheat, or a new seed of potatoes, that pays ten times better in the end. It is believed the mixture of the old breed with the new would greatly improve the stock, and this could be done with trifling expense indeed. In no event, of course, can the growing of stock of any kind in this section of country be so profitable as in the West, where thousands, nay, even millions of acres of prairie land lie waste, upon which herds of cattle by the hundreds are kept at an expense of two dollars during the whole season. Many are fed for a trifle during winter even, upon the stocks of corn left standing in the fields.

Stock raised in Pennsylvania is equal to any other, but, as stated before, cannot be raised at as little expense as in the West. In proof of this, and by way of comparison between raising cattle in the West and in Lancaster county, the following estimates are submitted:

Value of a calf in Pa., when 4 weeks old;	\$8.00
Cost of first year's raising,	10.00
"    second    "    "	12.00
"    third    "    "	15.00
"    fourth    "    "	20.00

Whole cost of raising (without charge for trouble), \$65.00

Now suppose a steer to weigh at five years old 1,200 lbs., and to bring 6 cts. per pound, and you have only \$7.00 of profit, much risk besides to encounter, and nothing for the trouble.

In Illinois or Iowa on the contrary we have the calf of

4 weeks old costing only	\$ 5.00
First years' keeping	5.00
Sec'd " " "	7.00
Third " " "	8.00
Fourth " " "	10.00

Whole cost of raising in Illinois or Iowa	\$35.00
Estimate this Western steer four year's old, to weigh as above 1,200 pounds and to bring 5 cts. per pound	\$60.00
Profit in Western States on steer	\$25.00

Thus it will be perceived there is a difference of \$18.00 of profit on every steer raised in the West, over one raised in Pennsylvania, and besides, it can be done there with less trouble and no impoverishment to the soil as is the case with us.

The above estimate may in the eyes of many seem blind or conjectural, but is nevertheless

true, and can be verified by facts. Land in Pennsylvania is worth from one hundred to two hundred dollars per acre, corn, one dollar per bushel, hay, twenty dollars per ton, and pasture, two dollars per month.

In the West, on the contrary, [land is worth twenty dollars per acre, corn fifty cents per bushel, hay from five to ten dollars per ton, and pasture for a whole season, two dollars per head for any kind of cattle.

It becomes clear therefore that we can never enter into competition with the people of the West in the item of stock growing as a business to be pursued of itself. Our only recourse is therefore to secure the best grades of cattle, and feed them during the winter, and make manure plenty from them, by which we shall be enabled to keep our farms in good condition. In this way we shall, by turning the whole of our corn and hay into manure, be able to make (as is believed) our farms so productive as that they will yield us thirty bushels of wheat to the acre, fifty of oats, and from sixty to one hundred bushels of corn.

Another obstacle with us to successful stock growing is the fact that pasturing cattle greatly lessens the strength of land and renders it unproductive. This fact has been demonstrated to absolute satisfaction, and when land becomes reduced it requires a cost of ten dollars per acre to bring it again into condition, by the application of lime or other fertilizers.

I may add, in conclusion, that the introduction of the Cherokee Texan cattle among the Western graziers (which breed is regarded amongst them as an excellent acquisition) is greatly revolutionizing the business of stock growing in the Western States.

PETER S. REIST.

**MEETING OF THE LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.**

The Society met Aug. 2d, 1869, in the Orphans' Court Room, H. M. Engle in the Chair, and A. Harris Secretary. The minutes of the last meeting having been read and approved, the Chairman made a few brief remarks, congratulating the Society upon the great variety of fruit on exhibition, which he considered as auguring well for the success of the Association, and remarked that the attendance of ladies upon this occasion may be the beginning of a new era in the progress of this Society.

Peter S. Reist next proceeded to read an essay upon *Cattle Raising*.

On motion, A. B. Kauffman, of the city, was elected a member of the Society, and Tobias Martin, of Franklin county, Pa., an honorary member.

The Secretary, by direction of the Chair, read two articles of editorial correspondence from the Philadelphia Press.

S. N. Warfel made some remarks on the growing of strawberries, and said that he had attempted to grow them in three different kinds of soil, but he failed to grow them in such perfection as he had seen them on the grounds of J. Knox of Pittsburg.

Jacob Stauffer said that he suspected carbon was needed for the perfect growth of fruit, and as this substance was so abundant at Pittsburg, this might account for the fact that Mr. Warfel could not equal J. Knox's strawberries.

Hon. John Zimmerman said he had a grape vine of the Clappier variety, which grew very enormously, and yet did not yield much fruit. He was at a loss to account for this.

H. M. Engle could not agree in Mr. Stauffer's surmise as to the utility of carbon, as he once knew peach trees to be planted in a coal bed, and they did not do as well as others that stood elsewhere.

On motion, the matter having in view a union with the Park Association the coming autumn, so far as holding a fall Fair is concerned, was indefinitely postponed.

Jacob Stauffer next proceeded to read an essay upon weeds (the mullein).

H. K. Stoner reported on the insect destroyer, which he conceives he has fairly tested, and he says he has fruit where he never had before, but he is still at a loss to know if the insect destroyer has had any influence or not, in the production of fruit.

H. M. Engle stated that he himself had had fruit this season where he never could grow any before, and he had used nothing, and he regarded all as owing to the season.

On motion, the Secretary was authorized to purchase Downing's Fruit Trees of America.

On motion, the President was directed to announce the committee of ten at the next meeting, who are to represent this Society in the National Pomological meeting, in Philadelphia, in September of this year.

Peter S. Reist submitted his views as to the cereals that farmers would do best in growing in Lancaster county and this part of Pennsylvania. Of the six kinds of wheat, viz., old red and old white Mediterranean, the smooth chaff and the Canada bearded (all winter varieties), and the bearded and smooth spring wheat he considered

best; first the Canada bearded, second the old white Mediterranean bearded, and third the old red wheat. Of spring varieties he regards the bearded spring wheat as the best.

He says "the Canada-bearded seems stiffer in the stem than the common kinds of wheat, and finer in quality." The spring-bearded did as well with him as could be expected under the circumstances. He says, "my opinion is that we shall be able to grow it ere long."

Of four kinds of oats, viz., the Black, the Side, the Barley, and the Schonen oats, he says "I like the common best under favorable circumstances, but it grows too rank on rich land; the Schonen grows too long on rich ground, so I therefore prefer the Black and Side oats, because these varieties do not grow so long in the stem."

Calvin Cooper stated that he was about to discontinue the Lawton blackberry, and says he decidedly prefers the Kittatinny and Wilson's Early. He believes blackberries should not be picked when wet.

H. M. Engle believes the Kittatinny a superior berry to the Lawton, so far as eating quality is concerned.

S. N. Warfel thinks the Kittatinny much the best berry of the cultivated kinds.

The display of apples, pears, and blackberries was creditable, indeed.

H. M. Engle had Hale's Early Peaches, Osbaud's Summer Pears; All Summer, Garrettson's Early, Red Astrachan and Sweet Bough Apples on exhibition.

Calvin Cooper contributed Maynard pears, apples to be named, and Kittatinny and Wilson's Early blackberries.

Dr. J. H. Musser exhibited two varieties of wheat found in Saxonia barley distributed by the Society, a Bloodgood pear, two pears to be named, an apple to be named, and Beeven apples.

Two varieties of pears, to be named, were sent into the meeting by A. C. Herr.

Casper Hiller sent in to the meeting All Summer, Rose, Sine qua Non, Early Joe and Astrachan apples, Gifford pears, and Hale's Early peaches.

Dr. W. L. Diffenderfer had on exhibition apples for which a name was wanted.

Mrs. Mary Reist, of Manheim township, had on exhibition several Reist apples.

A lot of gooseberries raised by John Rohrer, of West Lampeter township, from a plant obtained in Ohio, attracted considerable attention among the persons at the meeting.

Mr. Eby, of Elizabethtown, sent in samples of the Norway oats, to show that this variety sometimes fails to yield well. Mr. Eby also sent in a



branch of grape vine thickly covered with the grape leaf louse, and which had almost entirely destroyed the foliage of the branch.

After the members had indulged themselves in social intercourse and testing of the fruits, *ad libitum*, the Society, on motion, adjourned.

### SMALL-FRUIT CULTURE.

Mr. Peter Riley, residing within the limits of Lancaster, and a member of the Agricultural and Horticultural Society, furnishes us with the following, as the result of his experience in fruit-culture the present season. Mr. R's residence is on Orange Street, in the eastern part of the city, and his occupation is that of a machinist, working every day in the shop, devoting, with the assistance of his boys, only the mornings and evenings to the labors of the fruit gardening, and therefore only claims to be an amateur in the profession.

Area of strawberry grounds under cultivation, about one third of an acre, two parts of which was devoted to Triompho de Gand and Wilson's Albany seedling, and one part to Agriculturalist, Green Prolific, French, and Russel's seedling, and several other varieties.

The first fruit was gathered on the 8th of June, and the last on the 6th of July. The gross amount sold, 1,988 quarts, averaging 20 37-100 cents per quart, amounting to \$405.06 for the entire crop sold.

Mr. R. also raised and sold 295 quarts of Philadelphia Raspberries, at 25 cents per quart, amounting to \$73.75. These were grown in hills, four feet apart each way, producing two and a half quarts per hill, which per acre of 2,741 hills producing 6,852½ quarts, at 25 cents per quart, would realize \$1713.12½, all other circumstances being equal. Also 135 quarts of currants at 7 cents per quart, amounting to \$9.42, and 51 quarts of early Richmond cherries at 10 cents per quart, amounting to \$5.10.

The strawberries, raspberries, currants and cherries, were grown on a fraction less than half an acre. The first named was one, two and three years bearing, those of the third year not yielding more than half a crop. In a recapitulation of the amount realized in dollars and cents by Mr. Riley from this less than half an acre of ground, we find it amounts to \$493. 36.

Surely this result ought to afford sufficient encouragement to all those who may have a little ground, a little time, and a little energy, backed by a little will-power, to cultivate these luscious products of our generous soil.

We shall, on the whole, have a fair crop of fruit the present season, but mark our words, it is not going to be "dirt cheap," as some suppose, and so many desire. The consumption of fruit of all kinds is on the increase; it is coming to be regarded as one of the healthful necessities of life, and therefore the people will avail themselves of the opportunity of canning and preparing it in various ways for future use. Sufficient attention is not paid to this part of domestic husbandry everywhere. Only a few days ago, in a drive through the southeastern part of our county, we observed numbers of cherry-trees, whose ample crops seemed to be entirely uncared for. If these had been gathered and dried, or canned, or preserved some other way, in due season, there is no doubt they would in time have paid well for all the labor bestowed upon them.

### Miscellaneous.

In reading over the LANCASTER FARMER, I was highly pleased with the writer's suggestions on "Horticultural Exhibitions," and a certain passage seemed to occupy my mind considerably: "A true life consists in something else than simply accumulating property." Is there not a great deal of meaning in those few words? Might we not all profit a little by pondering over them carefully? In fact, I think they would be a good foundation for a sermon. But as I do not intend to preach from them, I would only suggest that each one mark the words, (as a text,) and preach their own sermon by trying to live up to the true meaning of the same. Let each one read over the whole communication, commencing on page 120 of the August number, and see if there is not some beautiful suggestions held forth.

J. B. E.

### COWS FOR GENERAL USE.

A correspondent of the *Country Gentleman* inquires very pertinently what breed of cattle should be selected with a view of making butter and turning them off to the shambles when their usefulness for dairy purposes is ended. This is the aim a majority of farmers have in raising stock; and amid the discussions on fancy cows bred for specific objects, the wants of the agricultural community at large are lost sight of. It may be laid down as a truism that there has been no class of animals more suitable for dairy purposes than what are called native stock—because they have been grades of early importations from all parts of the world, and the admixture of qualities has produced a hardy, good sized, milky and beefy

race, and if the best had been culled out and bred to pure bulls and the progeny well cared for, we should have had a class of milkers superior on the average to any in the world, and animals fit for the butcher at early age. But gross neglect in raising the young, pinching pastures, poor hay and mongrel bulls, have deteriorated the stock so much that we are compelled to begin anew, and start about where our fathers left off a century ago. We have now presented for our consideration the Durhams, Devons, Holstein, Ayrshire, Jersey, Guernsey, &c., and writers abound who praise up this or that breed according as their wishes may dictate, or if inexperienced in practical farming, as they are told.

A very accomplished writer in a popular magazine lately instructed the public that the Ayrshire is the cow for New England, as he was informed by those interested in that species of stock, that the return from such cows, in butter and cheese, is estimated at \$100 per year, and in milk at \$175 a year, and his city readers probably believed that such was the average yield of cows, but farmers know that it must be exceptional cows and exceptional circumstances to produce any such returns.

The average yield from the best dairies in Orange county is nothing like that, and in the experiments continued for several years by Ayrshire owners in Scotland, Col. Pratt and the Utica Asylum in New York, recorded in the *Country Gentleman*, Col. Pratt's dairy of native cows equalled those of the competitors in the amount of milk produced, and butter and cheese made, and yet fell far short of the estimate above given. A portrait of the most famous Jersey cow has been going the rounds of the agricultural papers, and a statement of the amount of milk and butter given and made by her, and the amount does not exceed that of many native cows, and certainly no one but a "Jersey fancier" would buy her for her shape and "latter end." In their place there is none superior to the Jersey cow, and every farmer can afford to have one or two in his herd, as they perpetuate their butter qualities, and its golden hue and flavor will do more for the rest of the churning than any vegetable or chemical compounds, but yet they are not the cows for farmers mainly to rely on. The Devon is not generally popular, owing to its comparatively light milking qualities. The Holstein and Guernsey are not sufficiently known to have their merits fully appreciated, and those introduced into the country have not met with eminent approbation.

A writer in a late issue of the *Country Gentleman*, on the Jersey cows, referring to the *Short-Horns*, speaks of the class raised only for beef

purposes, ignoring the fact of New England and New York State possessing at this time a breed of improved Short Horns, inferior to no other class of animals in quantity and quality of milk, and with a carcass unequalled for beauty and handling. These are not the ponderous, long-legged animals, which so many have in their eye, but short-legged, round-bodied, capacious-uddered, easy-keeping beasts, and if they were numerous enough to be purchased at reasonable prices, every farmer who had one to breed from would be on the road to fortune; but, unfortunately, the breeders are rare who can raise such animals, and the best we can do is to purchase the males and breed them to our common cows; and, as is generally the result, the progeny will be a superior animal, showing that the male stamps the characteristic of the offspring; and if we breed this progeny to a male of high breeding, and so continue, the improvement will last, as it is only a repetition of well-directed efforts that raises the quality of the herd, and not single crosses, as many farmers not acquainted with the true principles seem to think.

Now, without disparaging any other breed, without disturbing the comely Ayrshire in her efforts to fill the cans in which the lacteal fluid is conveyed to our cities and towns, or the Jersey in her successful endeavors to furnish the rich men's tables with piles of golden-hued butter, without robbing the Devon of her fame in producing the best of working oxen, without interfering with the march of the Holstein and other new importations in their successful paths, we cannot overlook the fact that, for general use on our farms, especially on inland farms, we need an animal of good size, yielding a fair quantity and quality of milk, that we may have our complement of butter and cheese, and at the same time feel that, when not suitable for the dairy, she can be easily fattened and turned off to the butcher with profit. For such uses can we find any breed superior to the improved milking Short-Horns of New England, and can we improve our stock better than by using the males of this breed on our native or grade cows? What do other folks say?

A NEW-ENGLAND FARMER.

#### THE CAPACITY OF AN ACRE.

Previous to the building of the Camden and Amboy railroad through New Jersey, over thirty years ago, there were tracts of land within two miles of Burlington, New Jersey, which were sold at \$5 to \$10 an acre. The reason for these low prices was the simplest one imaginable—they did not produce the interest of the money they cost. Now some of this very land is selling at over \$100 per acre, without buildings. The cause



of this advance in prices is equally plain—the land now produces much more than interest on its cost.

In any location where land can be made to produce the interest of \$1000 per acre, it would seem safe to purchase it at \$200. Though many acres around Burlington have produced and are still producing such returns, yet all are not. Some are very far exceeding it, while others are falling below, according to the crops cultivated and the skill and industry applied. It is to be observed in this connection, that the best returns are realized by perseverance, continuing at the business for a term of years, until fruits, if fruit culture be adopted, have come into full bearing. A trial of a single year amounts to nothing if then abandoned, as the first year on even an old farm is generally one of mere preparation for the second. The first may pay a profit, but not often.

Long experience in a thousand places has shown that an acre of land can be made to pay the interest on a very large sum. Mr. Leonard of Monmouth, obtained from asparagus the interest of \$5000, and from grapes the interest of \$7000 per acre. Both these may be regarded as standard crops, not liable to casualty, especially asparagus. In our neighborhood some remarkable results have been secured from standard fruit crops. There is an acre of blackberries on the farm of Mr. Dulty, which has produced the interest of over \$8500 gross—no doubt of \$7000 net.

The owner of a three-acre field of purple cane raspberries, told me that his sale in one season produced him the interest of \$25,000 gross. Large fields of even perishable strawberries have been made to pay the next interest of \$4500 per acre. There is a field of two and a half acres of blackberries near me, containing twenty-six hundred plants, which last year produced the interest of very nearly \$30,000 net. There can be no mistake about this last crop. But it was altogether exceptional, not likely ever to be repeated, as berries were then high, and while other growers had few or none, this field bore abundantly.

The value of land is to be measured by its productiveness, not by its price. All the paying returns above recited were obtained by good ordinary cultivation, not by forcing or extravagant outlay. Had these been resorted to, the return would have undoubtedly exceeded the extra cost. But the owners planted, cultivated, and waited until their plantings came into bearing. Such waiting is sometimes inconvenient to men of moderate means; but men will wait longer for legacies which are much less valuable. Thus grapes, asparagus, and the cane-producing berries are seen to yield a larger interest for money

invested in them, even in the high-priced land, than can possibly be realized from low-priced land, where no such markets as ours are within reach. The land at \$300 per acre in such a market is cheaper than that at \$10 without the market. The one acre pays interest on the cost of ten acres, while the other pays interest only on its own cost. But time and patience are required to realize such returns. It is he who endures to the end that succeeds; not he who plants and immediately quits.—*Hearth and Home.*

### THE SPARROWS.

Frederick the Great, of Prussia, waged war in his day against the sparrow, because he did not respect his favorite fruit, the cherry. The sparrow, of course, yielded to the conquerer of Austria, and disappeared from Prussia. But, at the end of two years, not only were there no cherries in all Prussia, but also hardly any other kind of fruit. The caterpillars destroyed all. And this great king, conquerer in so many battle-fields, was glad to sign an humble treaty of peace, and to surrender up a fair proportion of his cherries to the sparrow, once more restored to the country and to royal favor.

In several well-recorded instances, the wholesale destruction of these birds has been immediately followed by calamitous consequences to agriculturists. Noxious insects, the rapid production and increase of which man was totally unable to prevent, and against which he was powerless, but which the sparrow had kept in check, multiplied to a frightful extent, and swept before them the vegetables of the garden, the grass, grain, fruit trees, and vineyards. Wherever this has happened, men have been at last only too glad to reintroduce the sparrow; content to put up with the liberties he took in their gardens and wheat fields for the sake of the greater good he alone could do them in the destruction of their insect pests.

THE FARMER'S FRIEND.—A foreign provincial paper regrets "the reckless destruction of the goldfinch and other lovely denizens of the air for the purpose of supplying the London market," and thinks it would be well to head the example of France.

It says, "the slaughter of small birds in that country having led to a plague of insects, which destroyed the crops, a stringent law was passed, and is now in force there, to prohibit further destruction and every encouragement is offered for the restoration of the feathered element. The colonists spend heavy sums to secure the available services which we at home too slightly value. Shall we ever learn the lesson?"

## EFFECTS OF TREES ON CLIMATE.

The ground on which stands Ismailia, a town of 6,000 inhabitants, on the Suez Canal route, and the headquarters of M. de Lesseps, was but a few years since a dry, sandy desert, on which rain was never known to fall. All is now transformed. The old, dried-up basin of Lake Timsah has been again filled with water from the Nile by a fresh water canal. Trees, shrubs, and plants of all descriptions grow rapidly wherever the soil is irrigated, and the artificial oasis widens fast. "Accompanying," writes a correspondent, "this extraordinary transformation of the aspect of the place, there has been a corresponding change in the climate. At the present time Ismailia, during eight months of the year, is probably the healthiest spot in Northern Egypt." The mean temperature for the four months, June to September, is 94 degrees; the following four months, 74 degrees, and the four winter months, 45 degrees. Until two years ago rain was unknown; but in the twelve months ending April last, there were actually fourteen days on which rain fell; and very lately there fell a tremendous shower of rain, a phenomena which the oldest Arab had never previously witnessed. Rain ceases to fall on a country deprived of its forests, or only falls in violent storms. Here we see rain returning to the desert on restoring the trees.

**THE WIRE WORM.**—A correspondent of the *Gardener's Chronicle* says that he destroys the wire worms in his flower garden by using a liquid composed of one gallon of sulphuric acid to twenty of water, and applying plentifully to the soil late in the autumn, when the plants have done blooming, and early in spring, before vegetation commences. It is better to use it on the soil before the plants are set out or the seed is sown, as when it comes in contact with the larvæ it is very injurious to them. He says that he tried it on soil that was very much infested by these pests, and it killed every one of them.

**GAPES IN CHICKENS.**—A correspondent of the *American Agriculturist* gives the following mode for preventing gapes in chickens. He says he has treated his young chickens in this way for several years with complete success. When the chickens are in condition to take from the nest, he puts them with the hen in a coop with a board bottom, so as to keep the young ones from the cold and damp ground. They are fed with Indian meal, on which boiling water is poured from the tea-kettle, well stirred, and allowed to cool. The whole secret is to keep chickens dry and warm when quite young, and give them cooked food.

## Answers to Correspondents.

Mrs. P. E. G., *Enterprise, Lancaster county, Pa., July 14, 1869.*—The small spur-shaped galls on young grape leaves about quarter of an inch in length, of a greenish-yellow color, and brownish at the apex, I am not able yet to determine. They contain an orange colored larva about three lines in length (three-fortieths of an inch), and are composed of a head and eleven segments, very distinctly marked in their divisions. The head is of the same color as the body, but the caudal antepenultimate segments are whitish translucent. No feet or eyes are visible, but as the head is obtuse and retractile within the first segment, the eyes may therefore be concealed when the insect is dead or at rest. I will try and breed the *imago*, but until I succeed in doing so, I will not be able to determine what it is with any degree of certainty—whether coleopterous, hymenopterous, or dipterous. A similar gall is found on other species of vegetation also.

P. S.—Since writing the above all our specimens have died, and therefore we must await others. They probably are a species of midge, (*cicidomyia*).

## Review of Markets.

MONDAY EVENING, Aug. 16.—The tone of the cattle market was very dull last week, but prices were without material change. 2400 head arrived and sold at 9@9½c for extra Pa., and western steers; 9½c for a choice; 7a8½c. for fair to good; and 5½a-6½c. ½ lb gross, for common as to quality.

The following are the particulars of the sales :

82 Western, Owen Smith	8½ @ 9½
112 " A. Christy & Bro.	8 @ 9½
48 Chester co., Dengler & McCleese	6½ @ 8
140 Western, P. McFillen	7 @ 9½
100 " P. Hathaway	7 @ 9½
65 " James McFillen	7 @ 8½
50 " E. S. McFillen	8 @ 9½
142 " Ullman & Bachman	8 @ 9½
21 " Martin, Fuller & Co.	7½ @ 9
95 " Mooney & Smith	7 @ 9½
105 " J. Smith	7 a 9½
50 " T. McArdle	5½ a 9½
20 " Pa. H. Chain	5½ a 7½
109 Chester co., Jas. S. Kirk	7 @ 9
36 " B. F. McFillen	7 @ 8½
27 Chester county, B. Baldwin	6 @ 8
35 " J. Clemons	6 @ 8
65 " Clandler & Alexander	6 @ 9
14 " A. O. Kimble	6 @ 7
14 " Jesse Miller	6 a 9
100 Virginia, T. Mooney & Bro.	6 @ 8
90 Virginia, L. Frank	6½ @ 8
62 " Frank & Schomberg	7 @ 8½
92 " M. Dryfoos & Co.	6½ @ 8½
65 " Elkon & Co.	6½ a 8
3a " Blum & Co.	6 a 8½
40 " T. Weldon	5 a 7½
32 " Thos Duffly	7 @ 8
16 Delaware, L. Horne	7 @ 8
Penn'a Hope & Co.	7 @ 9

Cows were unchanged. 2000 head sold at \$40a60 for Springers, and \$45a75 for Cow and Calf.

Sheep were dull and rather lower; 11,000 head sold at the different yards at 5½a6c. ½ lb gross, as to condition.

Hogs were in fair demand at an advance; 2600 heads old at the Union and Avenue Yards at \$14a14.72 ½ 100 lbs., net.

LANCASTER, Wednesday, August 12.—Our market, which is usually more abundantly supplied with produce, and at cheaper rates than any other considerable town perhaps in the United States, fairly outdid itself this morning in these respects—as regards most of the leading article, meat excepted, which remains about as heretofore, and dear enough. Butter sold mostly at 23c. ½ lb., with some at 30, and still more at 25c.; Lard, 22c.; Eggs, 20 a 22c.—mostly at 20c.; Veal by the quarter, 10 a 12c. ½ lb.; Beef—best cuts, 20 c.; boiling pieces, 15 a 16c.; dressed chickens, 35 a 60c. each; Potatoes, 8 a 10c. ½ peck, and 50 a 60c. ½ bush.; Tomatoes—mostly 6 a 8c. ½ peck, and offered before the close of the market at 4c. ½ peck, and 25c per bush.; Apples 6 a 12 to 15c. ½ peck; Peas 15 a 20c.; Peaches 20 a 30c. ½ peck—several loads from Maryland selling at 20 a 25c.; Onions 20 a 25c. ½ peck; Green Corn 10 a 15c., and late in the morning at 6 a 8c. dozen; Cucumber 4 a 6c. dozen; Squashes 1 and 3c each; Jersey Sweet Potatoes, 25 a 40c. ½ peck, according to size; Jersey Watermelons, 20 a 40c each; do. Cantelopes, 5 a 10 up to 15c each, for very large ones; do. Egg Plants, 5 a 10c. each; Common Blackberries continue plentiful and cheap, selling mostly at 5c. ½ qt., but were freely offered late in the morning at 4 and 3c.; Huckleberries, 10 a 13c.; Elderberries, 3 a 4c., and afterwards at 2c. ½ qt.; new crop Oats, \$1.65 ½ bag of 3 bushels.

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☞ The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Office of the Lancaster INQUIRER or EXAMINER & HERALD.

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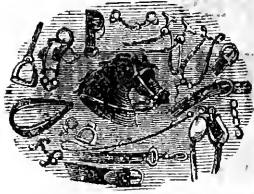
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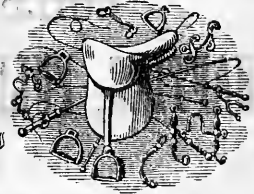
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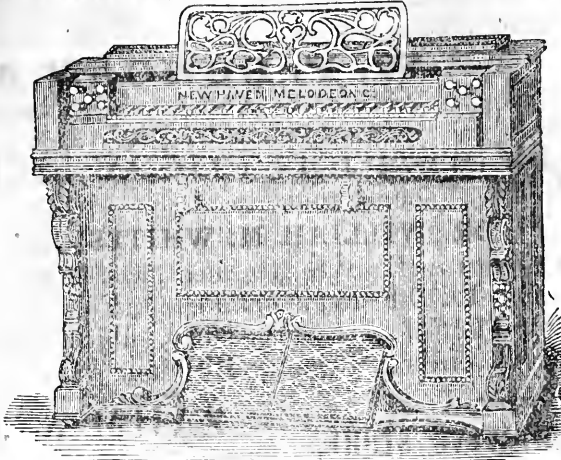
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THE

# Lancaster Farmer

VOL. I. LANCASTER, PA., OCTOBER, 1869. No. 10.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

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At ONE DOLLAR PER YEAR In Advance

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE LEAF AS AN ORGAN OF VEGETATION.

The organs in all living bodies are more complex as they approach the surface, or become exposed to external agencies. The root of the plant, as we have already seen, is an organ of vegetation, but by reason of its protection by being buried in the earth, its structure is coarse and tender. Its function being simply to imbibe the moisture; no complication beyond the cell structure is required. The stem is also an organ of vegetation, but its exposure to the changes and violence of the elements renders a higher and more complicated organism necessary. The leaf in its turn, emerging still higher into the air, and venturing more and more into the maze of external conditions as they are presented in the gases of the atmosphere, has a function to perform which requires a wonderful complexity of organic mechanism.

The economy of nature is so rich and lavish in all its powers of adaptation to the conditions of growth, that, although the organs just mentioned as the essential principles of vegetation, are to some extent isolated from each other, and widely different in form and structure, they are neverthe-

less most happy in their relative actions and blend, their functional powers so perfectly that every element of growth in the earth and air is carefully taken up, and all the changes of season and climate are most opportunely provided for.

In the process of vegetation, nature has not only amply provided for the upbuilding of the plant through its organs, but by various complications of structure and texture every action is carefully guarded. The living, moving animal is warned of danger, and seeks self preservation from an instinctive principle, which is inherent and always equal to the task, and when violence threatens destruction, hunger pinches, or thirst parches, the power of locomotion is the ready and gracious instrument of salvation and protection. But the plant being held to the spot by virtue of the very organ designed to furnish and sustain life, the stem has its safeguard in the epidermis, or bark, but the leaf being always tender and flexible, and ever in service during the whole season of vegetation; must, in its very composition, contain the power of preservation, in connection with every active exercise of its proper function.

The leaf as it meets our every-day vision, or is trod under foot when it has subserved its purpose and has fallen to the earth as inert matter, excites very little wonder or admiration to those who do not take the trouble to examine its wonderful mechanism, or its admirable adaptation to the office it is destined to perform. We look up into a tree when in full foliage, or upon the plant covered with the verdure of living green, and beyond the promise of fruit, or a rich harvest, our minds rarely penetrate the grandeur of the great scheme of nature which requires such a surface of what we term "Parerchymo." Were it not for the economy which is presented in this wonderful organism, it would be about as difficult to preserve a proper vital equilibrium in the world, as to expect a full vegetable growth in the absence of rain or sunshine. Those great fundamental powers that move and preserve the vital energies of the world, as they are recognized in the gases of the atmosphere,—heat, moisture and the

laws of life and health, must have their purifying and balancing principles, and there is no substance more effective in this work than that which is represented by the blade of grass, or the leaf of a tree.

The leaf is not only so constructed as to elaborate the sap of the plant, but it absorbs and consumes the carbonic acid gas, which is everywhere evolved, and which, were it not thus disposed of, would render the earth uninhabitable. In this general view it will be seen that nature is not thus clothed simply to gratify the vision of man, but to be conducive to his health, as well as to afford him food and nourishment.

The same laws which govern the conformation and structure of the root and branch, are applicable to the leaf also as an organ of vegetation. The nature of the tissues which enter into the fabric of the towering oak, runs through these deciduous organs, which flourish but for a season, and then fall and wither as the grass of the field. The relative position of the leaf upon the tree is not only essential to its function; but it is suggestive of the species and habits of the growth it represents. Its formation and size indicates its duration, and often determines its life, destiny, and the climate to which the plant that it represents, belongs.

The function of the root is to absorb the moisture of the earth, which, by a previous chemical action, has become laden with the various mineral compounds which enter into the life of vegetation. The fluid thus taken up is water simply, holding this mineral matter in solution, which undergoes a change by contact with the air that prepares it for assimilation. The leaf is not only the medium by which this is effected, but its peculiar structure renders it capable of its elaboration also. In order to understand properly the structure of this organ, it is necessary to explain the import of its functions.

This process of chemical change in the circulating medium, is natural to every species of life. It seems to be necessary that this transformation be effected within the body of the object, and the higher the organization is, the more complicated the apparatus for this purpose seems to become.

In the animal this change takes place in the lungs. The venous blood there comes in contact with the oxygen of the atmosphere, and a combustion takes place which sets free carbonic acid gas and returns arterial blood to the system for assimilation. This, however, is not the whole process of elaboration of the blood of the animal. The liver and other organs are concerned in its preparation for this final change. The structure of the organs thus involved would be a theme of fruitful

and profitable study, but it does not properly belong to our subject. We refer to them here, simply, as an analogy. But the grandeur of the arrangement between the two kingdoms, which is here suggested, is well calculated to challenge our admiration. One of the fundamental laws of chemistry, in effecting elementary combinations, is to have fixed and determinate proportions. Now to preserve that balancing power, which regulates the remote principles of vital action, elements which, in their normal relations, are mutually repellant, must become subservient to the common interests of life. Accordingly, the gas that is exhaled from the lungs of the animal becomes food for the plant, and is inhaled by its leaves. This gas is volatile in the extreme to the animal, and by reason of it being engendered in unlimited quantities from every species of dead or decaying matter, and every object of combustion; the economy of nature in using it up as food for the vegetable meets in a remarkable degree the very law of mutual benefit, by chemical equivalent, above referred to. Where the leaves of trees and grass and weeds, therefore, are to be found, there animal life can be sustained, and will be protected by the immense surface afforded by this verdure, for the absorption of all that is poisonous in the atmosphere.

As an organ to promote the growth of vegetation, the leaf has a two-fold significance. By its structure it is capable of nourishing the plant by a rapid absorption of the element, and it is also able to protect it by preventing an undue evaporation of the circulating fluid, in a dry season. These powers are the leading features in its function. If, as is alleged by some authors, the evaporation of the sap through the leaves, is equal in all cases to the absorption of the root, the heat of the sun, when the earth is parched and sterile, would very soon consume the parenchyma, which is formed of cellular tissue, and is extremely tender and susceptible to the slightest injury, where there is not a perfect chemical equilibrium of the conditions of growth; unless in its formation there be some safeguard in the leaf to prevent such injury. Whether this theory be correct or not, (and we are obliged to dissent from it on principle,) it will be seen that some provision for the protection of the tender plant, in such an emergency must be present.

There is an immense quantity of fluid lost by what is termed the perspiration of the plant, but as it is worked up in the various functions of vegetation, there must necessarily a great quantity of sap remain, for obvious reasons, and to prevent the loss of this, is one of the leading characteristics of the leaf.

The spongy and cellular tissue in the vegetable which is called "*Parenchyma*," and which constitutes the green surface of the leaf, is the central object of interest in the study of its function. In this tissue the life of the plant meets the conditions of growth as they are presented in the air and light, just the same as the cellular tissue imbibes the condition of growth as they are found in the soil. Though differently constructed, the root and the leaf are homogenous in nature, the difference in their conformation being necessary, in consequence of the character of the elements in which they have to operate.

It is the "*Parenchyma*" which constitutes the food for the animal. Grass and herbs which are designed expressly for such nourishment, are constructed almost entirely of this tissue. The woody or fibrous tissue enters largely into the higher order of vegetation, where fruit is developed, or the flower is evolved. In trees and shrubs that live for years, the woody tissue is found in larger quantities in the leaf, not only to produce a more enduring texture, but to render it better able, by virtue of its organization, to elaborate a higher quality of sap.

We have devoted this article to these reflections upon the uses and functions of the leaf, to enable us better to understand its peculiar structure, which will be our theme for the next article.

S. W.

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## THE TEETH OF ANIMALS.

### No. 3.

In the animal kingdom, as well as in the vegetable kingdom, there is a classification into tribes, families, and species. Nature has fixed laws and boundaries, which must be observed, if we desire to acquaint ourselves with her operations, and systematize our studies of her mysteries. As the result of careful investigation, the teeth of animals are regarded as the most secure basis for their classification.

The teeth of all animals are composed of three distinct substances; namely, Enamel which constitutes the crown, or grinding surface; the Dentine which constitutes the body and internal fabric; and the Cementum which invests the root, or that portion of the tooth which is embedded in the jaw. The importance of these distinctions in the structure of the teeth cannot be overestimated, since in *their arrangement*, the whole question of classification rests. The *Enamel* is the hardest organic substance known. Its per centum being from four to six parts of enamel matter in a hundred. When we consider the immense amount of service allotted to those organs, the amazing

strength of the animal will cease to be a wonder. The *Dentine* contains a great deal more animal matter than the enamel, and is consequently exceedingly sensitive when exposed to the air, or to the action of food and the fluids of the mouth. It is also a much softer substance than the enamel. The *Cementum* is still softer than the dentine, and more analogous to the substance of the bones of the system.

As we said before these structural distinctions must be borne in mind, in order to comprehend the mode of classifying, and determining the habits of the animal, and the kind of food necessary to its sustenance. For instance, the *gramenivora*, or those that live on grain and grass, have the arrangement of those substances entirely different to the *carnivora*, or those that live on flesh. In the latter the whole strength of the enamel is thrown to the surface, and the texture is dense or soft, according to the habits of the animal, or the length of time in keeping with the allotted limitation of duration and life.

In the former, as in the horse or cow, the crowns of the teeth, and especially of the front teeth, the soft substance of the cementum is mixed with, or is rather arranged between folds of the enamel. This provision of nature is admirably adapted to the wants and habits of those animals which are indispensable adjuncts of the farmer.

To illustrate this point, we have no better comparison at hand than the *mill-stone*. The transverse and concentric layers of the enamel as their sharp cutting edges come up boldly to the surface, and are filled in with this softer substance, and kept sharp by use, by the softer substance wearing out from between the harder substance, and thus in the normal state, the grinding surface of the teeth of those animals, is like the grinding surface of the mill-stone, with the exception that the tooth is self-sharpening. By this arrangement the outer edges or corners are kept as sharp as a knife, and is well calculated to clip off the smallest and finest blades of grass.

These soft centres are subject to changes as the animal grows in years, as indeed is the case with the whole bony system. They are hardened by age, and this will explain the disappearance of the mark of the horse when he reaches his tenth year. This cementum which fills up the spaces between the layers of the enamel, while the animal is yet young, is soft, and becomes stained or colored by the grass or food. As age advances, therefore, this cementum hardens almost to the density of the enamel, and it being no longer susceptible to the coloring properties of food, the mark of the horse gradually but very certainly disappears.

These constitute some of the characteristics of the teeth of animals that are purely granivorous. In their classification of course other distinctions come up in the way of peculiar formation, of the teeth and bone, by which their tribe and family can be identified. Our object being simply to develop the habits of the animal, by the kind of food suggested through the formation of the teeth, we will devote our future article to that purpose.

S. W.

## Agricultural.

### WHEAT.

Wheat is by far the most important and most extensively cultivated species of bread corn raised. Lancaster county at one time took the lead in raising wheat, the flour of which commanded the highest market prices. Our soil is of a clayey nature, most suitable indeed. Wheat is adapted to heavy, stiff lands, so that a great portion of Lancaster county might be termed wheat soil. It seems that Lancaster county flour now only commands \$7 to \$7.25 per barrel, while Western or Michigan flour brings \$10 to \$10.50. How does this happen? there must be a cause for this falling off—because the same varieties are accessible and mode of culture; has the climate changed, or the soil? Or may the hasty mode of cutting and stacking or storing away, the use of reaping machinery and the "double-quick go-ahead principle" now so prevalent, augment the cause? Perhaps each may have a bearing on the question of "why and the wherefore." Wheat cut ten days before thoroughly ripe, and when fully ripe, grown in the same field of thin limestone soil, yielded different results in the product—the one 220 pounds and the other 209 pounds. The time of cutting then makes a difference. Again, when cut, the shocks should be loosely set up and exposed to the sun and air, to drive off the excess of moisture before the wheat is densely packed or stored in the barn; is this done now as in former years? Or is it cut one day and packed away the next, because not cut till dead ripe? If cut earlier, and immediately stored, it is inclined to sweat and heat, and in proportion as this heating and sweating takes place, the grain is more or less damaged for bread making.

It is well understood by bakers, that the flour is not profitable to them that will take up and retain the greatest amount of water in the baked bread. It is ascertained that on an average 66½ pounds of dry flour naturally holds 10½ pounds of water. The flour in making bread will take up

half its weight in water besides, so that 100 pounds of flour will very nearly give 160 pounds of bread, allowing five per cent. for the loss in fermentation and the dryness of the crust. Common salt makes the paste stronger and causes it to retain more water, so that the addition of salt is a real gain to the baker. Alum is also used with a view to this end, but it is doubtful as being conducive to the general health. There are other adulterations known to the initiated bakers to improve inferior qualities of flour, which are, however, really deleterious. I shall therefore not mention them, lest unprincipled bakers might profit by the information, to the injury of their customers.

I, however, did not design to write a treatise on flour or bread making—my object is to awaken the inquiry as to the cause—"Why is Lancaster county flour inferior to Western flour?" Some may claim that the vergin soil in the West would be a sufficient reason, as also the climate, the variety of wheat cultivated, the absence of insects, atmospheric blight or fungoid infection, not yet introduced in this comparatively new country. All this may have a bearing upon the question, yet do they not leave their shocks longer in the field, exposed to the action of air and sunshine, to consolidate the grain, by carrying off the superficial moisture more effectually before the grain is stacked or put into barns? I, of course, do not pretend to know, and different farmers, through choice or necessity, may adopt different modes of manipulation. The question now is, do our farmers rush their grain into stacks or barns too soon? Can the difference of the produce be traced to a difference of time in cutting and securing the grain? These are the points. Not to enter into the question, what kind out of the 55 varieties of winter wheat, or the 67 varieties of spring wheat, found to exist in the catalogues should be used in given localities or soils? That may properly come under another head. Here arises the question, how do we come by these varieties? A few facts may draw the attention of our farmers to an important consideration. I will here simply state how and from whence several varieties of wheat came into use, gleaned from published and good authority:

Mr. Lambert, in a field extensively injured by rust and midge, found in the middle of the same a few heads perfectly free from both these maladies. These he carefully gathered, and from the product came the once famous Lambert wheat, a variety that ripened even earlier than the Mediterranean. It was found that a larger proportion of silicious matter had entered into its composition, thereby, perhaps, protecting it



against the attack of the rust or midge. A superior variety of spring wheat, known as the China or black-tea wheat, originated from a few kernels found in a chest of black tea. Hunter's wheat, one of the oldest and most esteemed varieties in Scotland, was discovered half a century ago, by the roadside in Berwickshire. The Fenton wheat, a very valuable variety, which yields heavily on very strong soil, such as that on which it originated, was derived from a few ears found growing among the rubbish derived from a quarry of basaltic rock. Piper's thick set, a wheat which yields largely on meadow soils, having produced 60 bushels to the acre, but is deficient in straw product, was derived from a remarkable ear, found in a wheat field and its produce carefully cultivated.

This shows the importance of observation and availing ourselves of natural indications of superiority in the growth, and following it up with judicious cultivation, and care to prevent admixture. Yet such are the laws of nature that all varieties tend to relapse to their original type, so that unless intelligence to guide and vigilance to perform or render the necessary attention at the proper time, the best sorts may deteriorate, the best soils wear out, and the product diminish both in quality and quantity. Who is sufficient to understand all the conditions conspiring to produce the best results, and even when greatly understood to guard against local or unusual or periodical climatic and other causes and effects? *Echo* answers who? J. STAUFFER.

## Horticultural.

### FRUIT EXHIBITION IN THE ORPHAN'S COURT ROOM.

Held Sept. 20th. 1869.

A special meeting was convened in the antechamber of the Orphan's Court Room, for the purpose of the appointment of the various committees to pass upon the fruits on exhibition. The President announced the following gentlemen as constituting the different committees, viz:

On nomenclature, Casper Hiller, J. B. Garber, Calvin Cooper, Levi S. Reist, and Henry M. Engle.

Committee on the merits of apples, A. D. Hostetter and Calvin Cooper.

Committee on the merits of grapes, H. K. Stoner and S. Welchens.

Committee on the merits of pears, J. H. Hershey and Peter Riley.

Committee on the merits of peaches, Dr. Saml. Welchens and John B. Erb.

Committee on the merits of vegetables and flowers, S. S. Rathvon, J. B. Kevinski, and Mrs. A. E. Roberts.

The committee on apples submitted the following report:

Levi S. Reist exhibited a small red apple worthy of cultivation, and also an assortment of other well-grown apples.

P. S. Reist had some good specimens of apples. G. W. Shroyer showed Fallawater, and Baldwin, and H. K. Stoner had some fine apples.

Henry M. Engle had a dark red apple of good size and fine flavor, together with seven other varieties.

C. Cooper had three extra large and highly colored Gravensteins, together with 40 other very well-grown apples.

J. G. Rush had eleven varieties of apples.

A. D. Hostetter had good specimens of Fallawater, together with a number of other varieties.

Levi Hoover had six varieties.

Christian Hoover, five varieties.

W. L. Diffenderfer a handsome plate of Agnes apples.

Casper Hiller a seedless apple, and some very large specimens of Rambos, with 30 other varieties.

J. H. Hershey a plate of apples.

Aaron Witmer, fine Bellflower and Fallawater.

J. B. Erb, some very fine specimens.

By the Committee,

CALVIN COOPER,

A. D. HOSTETTER.

### GRAPES.

The committee report the finest display of grapes ever exhibited in Lancaster.

H. M. Engle, Marietta, a large assortment of very fine grapes; the Concord and *Creveling* deserve special notice.

Peter Riley, Lancaster, the Concord and *Israel-la*. The latter a new variety, but of very fine flavor and growth.

D. Smeych, Lancaster, *Allen's Hybrid*, a white grape of fine flavor and growth.

Reuben Weaver, of Rapho township, a fine assortment. The *Martha*, a white grape and seedling from the Concord, in quality and growth, is equal if not superior to it, deserves especial attention by our grape growers. Also, the *Telegraph*, early, hardy and of fine flavor. These varieties deserve special notice.

S. N. Warfel, Strasburg. The finest display of Diana, a hardy, vigorous grape, and fine flavor; very creditable.

H. K. Stoner, W. Lampeter. The *White Malaga*, and the *Black Hamburg*, grow in a cold

grapery. Very fine specimens, and deserve special notice.

G. W. Schroyer, Lancaster. The *Black Hamburg* and *Catawba*. Both very creditable.

Aaron Witmer, Lampeter. The *Concord*; a very creditable display.

S. Benedict, Lancaster. The *Mazatawny* and *Diana*; splendid specimens, equal to any on exhibition.

D. I. Mayer, Strasburg. Very good *Delaware*, and the *best Clinton*.

J. B. Amwake, Lancaster, a fine assortment of excellent grapes.

John K. Reed, Lancaster, a splendid specimen of the *Clinton*.

Dr. Carpenter Weidler, Mechanicsburg, the *Herbemont* and *Iowa*, both deserving special notice, and the finest specimen of *Concord* upon exhibition. This display was so good and the fruit so well cultivated, and of such excellent quality, that the committee award Dr. Weidler the highest premium.

J. H. Hershey, Rohrerstown, splendid *Catawba*, fine *Concord*, and *best Isabella*.

J. B. Garber, Mountville, the *largest assortment*, and all very fine grapes.

Allen Richards, Columbia, the *Concord Adirondack*, and the *Union Village*. The latter a large fine flavored grape, and hardy, vigorous grower, deserves special notice.

C. Hoover, East Earl, splendid *Delaware*, the *finest on exhibition*.

Casper Hiller, Conestoga Centre, a large assortment of very fine varieties. Deserving special notice.

T. M. Strole, New Holland, a very creditable specimen of the *Delaware*.

Geo. Sigle, New Holland, a very fine specimen of the *Catawba*.

H. K. STONER,  
S. WELCHENS,  
Committee.

#### PEARS.

The Committee on Pears report a fine display generally. The following are especially mentioned:

H. M. Engle, one dish very fine *Belle Lucrative*.

Peter Riley, one dish extra fine *Beurre Clairgeau*; one dish very fine *Beurre Diel*; one dish very fine *Lawrence*.

D. Rhoads, one dish very fine *Bartlett*.

S. N. Warfel, one dish very fine *Seckel*.

J. P. Schaum, a few specimens *Beurre Clairgeau*, very fine.

L. S. Reist, fine *Seckel*.

H. K. Stoner, fine *Beurre Diel*.

S. Benedict, one dish extra *Buerre Clairgeau*; one dish fine *Buerre Diel*.

Charles E. Long, one dish fine *Beurre Diel*; fine *Beurre Clairgeau*.

J. H. Hershey, a few specimens extra large *Lawrence*.

C. F. Eberman, city, had a dish of very fine *Louisa Bonne de Jersey* pears.

C. Hiller, fine *Flemish beauty*.

There are quite a number of dishes of fine fruit deserving of special notice; suffice it to say, it is so generally good as to deserve a flattering compliment to all the exhibitors.

J. H. HERSHEY,  
PETER RILEY.

#### PEACHES.

The Committee report a very creditable display of Peaches.

H. M. Engle, Marietta, had the *largest assortment*, and very fine varieties. This display deserves special notice.

J. P. Schaum, Lancaster, the *Susquehanna*, a splendid peach, and the *Crawford's late*. Deserve special notice.

John P. Meyer, Lancaster, a *Seedling*, and *Belle de Vitry*. Very fine.

P. S. Reist, a few very fine peaches, without a name.

J. C. Snyder, a splendid specimen of the *Susquehanna peach*. Deserves special notice.

J. B. Erb, Strasburg twp., six varieties of *Seedling*. A very creditable display.

Aaron Witmer, Lampeter, a few fine peaches without a name.

D. Evans, Lancaster, *Crawford's late*. Very creditable.

Andrew Leibly, Lancaster, one peach. The largest *Crawford's late* on exhibition.

Casper Hiller, Conestoga Centre, *Southern Cling*, large, yellow, fine; *Crawford's late*, *Ward's late*, *Amelia*, *Southern*, and a variety of *Seedling*, all very fine.

John Hubley, Lancaster, a branch with peaches, no name. Very creditable.

Calvin Cooper, Enterprise. Good assortment, and very fine fruit. Deserves special notice.

#### CANNED PEACHES.

Mrs. J. B. Livingston, Lancaster. A fine display.

Mrs. D. S. Bursk, Lancaster. A splendid display.

Mrs. J. P. Schaum, Lancaster. Very fine fruit.

H. A. Cooper. Fine fruit.

The display of canned peaches, though not large, was very creditable, and deserves especial notice.

Dr. S. WELCHENS,  
JOHN B. ERB,



## VEGETABLES AND FLOWERS.

The Committee appointed to examine and report on the vegetables and flowers on exhibition at the Court House, on the 20th of September, submit the following:

In the vegetable department they found that the exhibitors were Dr. C. Weidler, Casper Hiller, Peter Reiley, D. E. Mayer, H. K. Stoner, J. H. Hershey, S. D. Hostetter, D. Landis, J. P. Schaum, and J. G. Rush. The vegetables on exhibition embraced the Early Rose, Excelsior, Early Sebec, Goodrich, Harrison, Willard, Michigan White, Western Chief, and Monitor, potatoes; Crosby's Sugar Corn; Accidental Tomato; Turnip Beets; Drumhead Cabbage; Filderkraut; Red-peppers; and the Hercules Club Gourds. All the specimens on exhibition were of the finest kind, and therefore, where they came in competition, it was difficult to determine between them. The Committee feel, however, that a preference is due to the lot of Early Rose potatoes exhibited by Dr. C. Weidler, although they were not so large as the same variety exhibited by H. K. Stoner. But for fine shape, uniformity of size, and smooth skin, nothing excelled them. The nearest approach to them were those exhibited by Peter Reily, which, except that they were not quite so smooth, could not be distinguished from them. As the other articles on exhibition consisted of only single specimens, all of which will be reported in the city papers, with the names of the exhibitors annexed to them, it is not deemed necessary to notice them further here. Although the display in this department was very fine, it was, at the same time, rather limited when compared with our resources.

The floral department was also limited. There were 64 varieties of Verbenia by G. W. Shroyer; a handsome specimen of "Joseph Coat," *Amaranthus tricolor*, by Daniel Smeych; fine Zinias, by Mrs. J. P. Schaum, also a fine Boquet; a dwarf Oleander in bloom by Mrs. Smith; a beautiful Double Geranium by Calvin Cooper; Roses by J. G. Rush; a Boquet by Mrs. Daniel Smeych also one by Mrs. P. Riley; two Boquets, two Hanging Baskets, and a Scarlet Canna plant, by Mrs. S. S. Rathvon.

Respectfully submitted,  
S. S. RATHVON,  
J. B. KEVINSKI,  
MRS. A. E. ROBERTS.

The exhibition was indeed the finest ever seen in this city, and reflected great credit upon all concerned.

The Wheeler and Wilson Sewing Machine on exhibition was admired by many.

## Botany.

## WEEDS—NO. 7.

WHITE WEED—*Die Wucherblume*.

Twenty years ago I noticed the fields in Chester county, along the railroad, perfectly white with the ox-eye daisy—the *Leucanthemum vulgare*, of Botanists. I notice this vile intruder is becoming a great nuisance in certain sections of Lancaster county. The common wild or stinking chamomile, also known as Dog's Fennel, May Weed, &c., German, Stinkende Kamille. The botanical name of this is *Maruta Cotula, D. C.*, and is common and abundant in lanes and farm yards. Although a disagreeable little weed, it is not so apt to spread to an injurious extent over cultivated grounds as the white weed. This latter has been permitted to get too extensively introduced into pasture fields. Above Mount Joy I noticed fields quite white with it this summer. Cows will occasionally crop a portion of the weed, and some have alleged that it contributes to the making of good butter. This fancy may have, in a measure, been a protection, but on the best authority it is deemed wholly worthless. This plant propagates rapidly and is difficult to get rid of when once fully established. Like the Canada Thistle, continual cropping and plowing up is about the only remedy; but thenceforth fence rows and neighboring fields must be well watched and kept clean also, to prevent the formation of fresh seed to be introduced.

I agree with H. M. E., in his article on the Canada Thistle, that "what landholders most care, is to prevent its getting a foothold on their land." Yet allow me to say that the Canada Thistle belongs to the genus *Cirsium*, of which we have ten species, agreeing in many particulars, so that it can form no objections for specifying the particular point of distinction. There is another pasture thistle, found in dry fields, the *cirsium pumilum*, that has often been mistaken for the Canada Thistle, but it is easily exterminated. The true Canada Thistle, *Cirsium arvense*, is quite a different thing to get rid of—every little fibre will sprout again, and it requires constant cropping, so as to exhaust its vitality and kill the roots. True, the name is of no consequence, nor a botanical description to him who knows the plant and its evil. Yet it is well enough to know how to distinguish it. In this, the outer scales of the appressed involucre are barely prickly pointed; the filaments nearly smooth; in the others they are hairy; heads imperfectly diœcious. Plant low branched; roots extensively creeping:

leaves slightly wooly beneath sinuate pinnatifid, that is much divided and cut, with prickly margins; heads small and numerous; flowers, rose purple. J. S.

## Communications.

### THE FARMER'S CURSE.

MESSRS. EDITORS:—There is no doubt but that the farmers will have to contend against weeds always, as it is on record in Holy Writ—that for the disobedience of the divine command by our forefather Adam, the curse was pronounced—that “Thorns and also thistles shall the Earth bring forth for thee, and in the sweat of thy brow shalt thou eat bread.”

Now as our friend H. M. E., in last No. of the LANCASTER FARMER, has given us a chapter on, the Canada Thistle, I may be allowed, I presume, to say my say on that pest, and also on another of even a greater curse.

As to what Mr. E. states about the Canada thistle, I fully agree with him, and farmers can not be too wide awake to keep it at a distance. Many farmers possibly may not know the nuisance even when they see a stalk or two on their farms, and thus permit it to get a foot-hold on their grounds, causing much trouble afterwards; while had they taken it on its first appearance, it can be easily eradicated. Some ten or twelve years since, I noticed a small patch on my farm, close to the turnpike, perhaps about ten by fifteen feet in extent. I went to work with a will, determined to conquer it. The field was in pasture, and I gave each stalk a good sprinkling of salt, two or three times during the summer—this killed the stalks, and the cattle licking the salt and tramping the ground, altogether had the effect of badly using up the pest. Next season only a few sickly sprouts made their appearance, and with a few more doses of salt it disappeared entirely. The field has been in corn, oats, wheat, and grass, but none has been there for the last six or eight years.

Bad as this Canada thistle pest is, there is another that is even worse. The weed I allude to has however neither “thorns nor thistles,” and yet is worse than any other weed that the farmer has to contend with, when it once has a local habitation on his grounds. *Couch* or *Quack* grass—*Agropyron*, *Triticum repens*, is the most troublesome of all weed nuisances. It propagates from both seeds and roots; and if a scrap of a root is dragged from one part of a field to another, by plow or harrow, it will be sure to “fix itself,” and in a year or two, a large patch is there. When

it gets along fences, or in an orchard among the roots of trees, it is a “permanent fixture,” and ready to migrate in all directions—the ground becomes a mass of roots, preventing all other crops from growing, and at least injuring, if it does not kill the trees.

Farmers should become familiar with all weeds as well as useful plants, noxious as well as harmless insects—in a few words, to study Botany and Entomology. It would be the means of aiding and enlightening them far beyond what they otherwise can possibly have any conception of.

J. B. G.

## Editorial.

### THE LATE HORTICULTURAL EXHIBITIONS.

The Horticultural Exhibition, held at Philadelphia, by the *Pennsylvania Horticultural Society*, in their spacious hall, on Broad street, was perhaps the finest of its kind ever held in this State or elsewhere. Over 3,200 different varieties of fruits were on exhibition from all parts of the United States and Territories, besides a large variety of fine vegetables. The floral department was superb, and well represented in native and rare exotic plants, many of which were in bloom, including the “Century Plant”—*Agave Americana*—which reared its flower-stem some fifteen or twenty feet above its base. The display was grand, and the immense throng which crowded into the hall, especially on the evenings of the exhibition, showed that the efforts of the Society are duly appreciated in the community where it exists. The arrangements on the whole were admirable, and the liberality of the managers worthy of a standing example to other similar institutions. The exhibition closed to the public on Thursday evening, Sept. 16th, and the central portion of the hall was cleared for the reception and banquet, which took place on Friday evening, the 17th.

Here the Society, its friends, and its special guests, the members and delegates of the “American Pomological Society,” which held its biennial convention in an upper apartment of the hall, all assembled to engage in familiar chat, and to partake of the festivities of the evening. Of course, on such an occasion, the leading viands were fruits—the rich and luscious fruits, which had been for two days so temptingly set before the masses, with the admonition, not to “touch, taste, nor handle.” It was also arranged that all who desired it had a cozy little basket of fruit to carry away with them, to their friends at home.

But the banquet did not consist of fruit alone, but other things in abundance, including oysters, lobster sauce and coffee, with cakes and comfits, were profusely provided. The whole ended with toasts drank in wine and lemon punch, in a mild and refreshing form.

We cannot possibly give any of the details of the fruit on exhibition, for the amount was too vast to comprehend it at a glance, but we were particularly struck with the superlatively fine contribution of our young sister State of Kansas, and we could not help thinking, that "bleeding Kansas" has not certainly bled in vain, if these are the evidences of the productive qualities of her "gory soil." Such apples and pears—but we forbear, lest we may not be able to do the subject justice.

Our local society was represented in the Pomological Convention by ten delegates, several of whom had fruit on exhibition, namely: Messrs. Riley, Hostetter, Erb and Engle, the last named taking two of the premiums awarded, for six bunches of second best Concord and Creveling Grapes.

The late exhibition of our local society was perhaps the finest of its kind ever held in the city of Lancaster—such at least seems to be the unanimous opinion of all who witnessed it. The display in grapes, apples, peaches, pears, quinces and potatoes, compared favorably with the late great exhibition at Philadelphia. The only department in which there was apparent meagreness was in the floral. The lady friends of the society—if it has any lady friends, and surely it ought to have—do not take the same interest in the exhibitions and general welfare of the society, that characterizes the ladies of the eastern counties of our State. We know that there is material sufficient at almost any time for such floral embellishments, as none but a female mind and hand could conceive and execute. But we are progressing, and perhaps a good time is coming when our association will even receive female recognition.

Neither was the vegetable department so full as it should have been, and, perhaps, on this occasion, it was lucky that it was not, for every particle of space on the tables was occupied, and in some places things were too much crowded to look well. Although the display was a most magnificent one and highly creditable to the society, yet there is still room for improvement, and no doubt future times and opportunities will suggest what is yet needed in attaining a higher state of perfection. We refrain from giving details, because these are published in the daily papers, and reports of the respective committees

will be found in this number of our JOURNAL. We may add, however, that over 350 varieties of fruit were on exhibition.

Since writing the foregoing we have received the account of the annual exhibition of the "Fruit Growers and Farmers Society of East Donegal," which was held in the Marietta Town Hall, on the 21st and 22d of September. From all accounts, printed and verbal, this exhibition was fully twice as large as that of the county Society held at the Court House on the 20th. It occupied the two large rooms on the second and third stories of the Town Hall, each of which is fully as large as the Orphans' Court Room, and are lighted from rows of windows on each side. In each of these were three tables, extending their entire length, all of which were crowded with fruit, vegetables, cereals, plants, flowers, &c., and in addition to which, a large variety of domestic fowls were added. We feel as much pleasure in this horticultural demonstration on the part of Marietta and its vicinity, as we possibly could feel, if it had taken place here in the city of Lancaster, because we see in it a noble example for good, which we hope the citizens of Lancaster may ultimately find it their pleasure and interest to imitate. It also suggests that in another year, blessed as this has been, the county Society ought to secure Fulton Hall for two or three days, in which to hold its autumnal exhibition, and that it also ought to offer a liberal list of *premiums*. Notwithstanding our last exhibition might have been larger, had there been more space, still, our people require more than an ordinary stimulant to bring them out; but should they once come to the proper determination, we *know* they have the material, the ability, and the taste, to make a most magnificent display. The late exhibition at Marietta does honor to the horticultural head and heart of that place, and ought to be as a sign of hope for the county of Lancaster, which has so long been behind her sister counties of Chester, Delaware, Philadelphia, Montgomery, Bucks and others. We have been informed, and indeed the printed report will show, that the main department in which it excelled ours, was the very department in which we were sadly deficient, namely, the vegetable, floral, and cereal. These in future must demand more of our attention, for if fruit alone exhausts our whole attention, to the neglect of vegetables, we shall be as bad off for vegetables as we have been for years past for the want of fruit.

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WE hope our patrons who yet owe for the FARMER will remit to this office the amount of their subscription, as we are greatly in need of funds.

### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held at the Orphans' Court Room, September 6, 1869, H. M. Engle in the Chair, and Alex. Harris Secretary. After the minutes of the previous meeting had been read and approved, the following gentlemen were proposed as members, and duly elected, viz: George B. Owens, Upper Leacock; Samuel M. Clair, Millersville; John Hershey, Manor; and David Evans, City.

The Chair now submitted the names of the following gentlemen as those who shall compose the delegates from this Society to represent it in the National Pomological Convention at Horticultural Hall, Philadelphia, viz: J. B. Garber, S. S. Rathvon, Levi S. Reist, Dr. W. L. Diffenderfer, John Brackbill, J. H. Hershey, J. D. Hostetter, Jacob Frantz, Silas N. Warfel, and A. Harris. On motion the name of H. M. Engle was added. On motion of A. J. Groff it was decided to hold a special meeting of the Society on Tuesday evening, September 14th, in order to make arrangements to attend the Pomological Convention, beginning on September 15.

The President urged the propriety of the delegates and others attending the Pomological Convention that they should take of their fruits with them, in order that Lancaster county be fully represented. He suggested that the Convention would be a good place to have fruits presented, in order to have them named.

On motion it was decided to hold a fruit exhibition in the Orphans' Court Room, on Monday, September 20. The Chair appointed as a committee of arrangement the following named gentlemen: Dr. W. L. Diffenderfer, S. S. Rathvon, Alex. Harris, H. K. Stoner, S. N. Warfel, C. E. Long, A. J. Groff, A. D. Hostetter, J. B. Erb, and J. B. Kevinski.

On motion the following gentlemen were appointed as a committee to inspect and report upon the merit of the fruit upon exhibition at the meeting, viz: J. B. Garber, Dr. W. L. Diffenderfer, S. D. Hostetter, Jacob Frantz, and Calvin Cooper.

Jacob Stauffer now proceeded to read an essay on Lancaster county wheat. He endeavored to show why western wheat in our market reports is quoted so much higher than that raised in this neighborhood. Experiments made in England showed that grain cut ten days before ripe produced more flour than when taken off at any other period. Wheat should be cut early and left stand in the field three or four days before taken to the

barn or stack, in order that superfluous moisture be removed and the albumen become compact.

Mr. Brubaker was in favor of early cutting. Other members made remarks on this subject, one of whom apprehended that while the grain would yield more flour, the quantity of grain would be less.

H. K. Stoner stated that from fifteen square yards of ground, planted with Early Rose potatoes, he raised one hundred and forty pounds, which would be at the rate of seven hundred and fifty-three bushels to the acre. Thirty of these tubers aggregated thirty pounds, seven of them weighed, in the aggregate, nine and a half pounds, one sprout had seven which weighed five pounds, and forty-nine sprouts averaged three pounds to the sprout.

To a question from Dr. Hiestand, Mr. Stoner replied that the potatoes were of good quality.

Casper Hiller said he had Early Rose potatoes which were equal to the Mercer.

J. Hartman Hershey had Early Roses which were equal to the Mercer. He had a good yield from them.

Dr. Hiestand thought this variety had sustained its reputation.

H. M. Engle said that the Early Rose has sustained itself. The production is good, but there is some difference of opinion as to quality. He considers them nearly as good as Mercers, which have never been equalled, taking everything into account. The Goodrich, which last year was a failure, has redeemed itself. It is not equal in quality to the Early Rose. The liability of the Mercer to rot, is probably owing to its fine texture. Potatoes should not be left to lie long in the sun after being taken out of the ground.

Mr. Stoner gave his experience in raising potatoes from sprouts. A larger crop can be obtained from sprouting the potatoes than from planting the eyes.

J. B. Erb had failed in planting sprouts. It might do well, if started well.

Casper Hiller can raise as many potatoes from a sprout as from an eye. He made an experiment. He put the potatoes into flower pots and left them there until the sprouts were six inches long, then he broke the sprouts into small pieces and placed them in a hot house, where he left them root for several weeks. A single eye will grow several sprouts.

John Brady gave the result of his experience in putting potatoes on the ground and covering them with straw and straw manure. He thought a thousand bushels per acre might be raised by this mode. Cane straw would answer for covering,

Casper Hiller had tried this plan and failed in it.

H. M. Engle said this is no new system. If put on top of ground and covered, the covering can be removed in the fall and potatoes raised, with little trouble. He did not think there was any advantage in sprouting.

The display of fruits was very large; a table extending nearly the entire length of the Orphans' Court Room being filled with apples, pears, peaches, grapes and other articles. Most of the apples, pears and peaches were of large size and excellent quality. Among the grapes contributed were some very fine specimens of this fruit. We shall not specify, but leave that for the committee appointed for the purpose. The following is a list of the exhibitors, with the articles contributed:

J. B. Garber, Columbia: Stalk of the Boemerianivia or Ramie; specimens of Couch or Quack grass; Georgia clover; Uniola Catafolia; Ornamental grass; pepper from Japan; North Carolina seedling and Telegraph grapes; Hericourt and St. Mark pears, and apples for a name.

J. B. Erb, Beaver Valley Fruit Garden: Half bushel of Jeffries' apples, Pound, Bellflower, Rambo, Sour Pippin, Sweet Pippin, Romanstem, and several other varieties of apples; several varieties of peaches and pears; branch containing ten quinces; jar of raspberries two years old; jar of yellow tomatoes; large cluster of red peppers; clusters of grapes and raspberries; bunch of Great Mexican Ever-bearing strawberries; and a nectarine, &c.

Casper Hiller, Conestoga Centre: Bartlett, Flemish Beauty, Belle Lucrative, Seckel, St. Ghislin, Stevens' Genessee, Henry 4th, and Kirtland pears; All Summer, Sine qua non, Early Rambo, Large Rambo, Maiden's Blush, Jeffries, Benoni, Gravenstein, York Russet, and Sweet Crab apples; Susquehanna and Old Mixon peaches; Rogers' No. 15 and Rogers' No. 19 grapes; Excelsior potatoes.

Dr. W. L. Diffenderfer, New Holland: Keswick, Codlin, and Agnes apples, and also two kinds for name; Beurre Bosc, Bergamot and Flemish Beauty pears.

Geo. W. Schroyer, 9th ward, city: Black Hamburg, Isabella, Clinton, Concord, Hartford Prolific and Northern Muscatine grapes; Pound, Smoke House, Pittsburg Pippin and Rambo apples; Lawrence pear; box containing fifty varieties of Verbenas in flower, principally seedlings.

John Zimmerman, Lancaster: Marshal Neil Rose, yellow and very fragrant.

Henry Erb, Manheim township: No. 15 Rogers' grapes.

Dr. Joseph Gibbons, Enterprise: Louise Bonne

de Jersey and Flemish Beauty pears; also two kinds of the same fruit for name.

Jacob H. Zercher, West Lampeter: English Horn.

H. K. Stoner, West Lampeter: Fine specimens of Black Hamburg and White Malaga grapes, grown under cover.

Mrs. S. B. Rogers, Lancaster: A basket of very large Flemish Beauty pears; Maxatawuy grapes.

Daniel Smeych, Lancaster: Diana Red, Allen's Hybrid, Concord and Clinton grapes.

Jacob M. Mayer, Manheim township: Jackson White and Henry potatoes.

P. S. Reist, Warwick township: Yellow York peaches; Fallawater and Pound apples.

H. M. Engle, Marietta: Concord, Clinton, Delaware, Maxatawuy, Hartford Prolific, Franklin, Ontario and Diana grapes: Hosenshenk, Bartlett and Belle Lucrative pears; Stump the World and Susquehanna peaches, also apple and pear for name.

Reuben Weaver: Martha, Hartford Prolific and Telegraph grapes.

Christian H. Miller, West Lampeter: variety of grapes without name; also apples and pears to be named.

John Huber: Seedling grapes; Doyenne Boussock pears.

Dr. J. H. Musser, Lampeter: Benoni apples.

Peter Riley, Lancaster: Israella, Clinton and Concord grapes; Bartlett pears; Harrison and Early Rose potatoes.

L. S. Reist, Warwick township: Three varieties of apples to be named; Grant tomato, advertised by Washburn & Co., of Boston, in *Agriculturist*; Concord and White Fox grapes; Flemish Beauty pears.

Samuel Binkley, Warwick township: Susquehanna and Morris White peaches.

S. S. Rathvon, Lancaster: Clinton and Isabella grapes.

J. B. Kremer, Lancaster: Large peach, without a name.

M. N. Brubaker, East Hempfield: Nameless grapes and peaches.

Calvin Cooper, Enterprise Nurseries: Northern Muscatine and Hartford Prolific grapes; Benoni, Gravenstein, Jersey Sweet, Munsen Sweet, and Fall Pippin apples.

A. D. Hostetter, Mount Joy: Apples and pears to be named.

S. N. Warfel, Strasburg: Four kinds of pears to be named; Hartford Prolific, Israella and Diana grapes.

P. S. Reist and Abram Shank had on exhibition four leaves of Connecticut Broad Leaf tobacco,



each of which measured forty inches in length by twenty in breadth. These gentlemen have about ten acres of this plant.

After the Society had indulged themselves in social intercourse and in the testing of the fruits, it, on motion, adjourned.

THE NEW DIRECTORY OF LANCASTER embracing all the adult males and heads of families, with their occupations, residences and post office address; together with a carefully classified business directory; and an appendix, containing a descriptive list of the courts, banking houses, public buildings, churches, educational and benevolent institutions, secret societies and other organizations; in short, a perfect *vade mecum*, for farmers, mechanics and men of business. This work is the most complete of its kind of any that has ever been gotten up in this county, and is published by Barnes & Pearsol, practical printers, at \$1.50 a copy. The work also contains a map of Lancaster county, with the townships and their boundaries, towns and villages, railroads, water courses, public roads, and other items, usually included in maps. It is also interspersed with advertisements of most of the prominent business establishments in the various towns, villages and hamlets of the county; and therefore, we do not hesitate to recommend it as a convenient hand-book to our readers. Even when a work of this kind becomes comparatively old and obsolete, it may be referred to as a sort of chronological history of the times that have passed away, and in this respect may be a most valuable record.

## Miscellaneous.

### "WANTED—A CLERK."

A few days ago, a gentleman advertised in this paper for a clerk, and requested applicants to address their notes to him at the *Ledger* office. By the close of the first day on which the advertisement appeared, there were four hundred and eighteen applicants for this one clerkship. This afforded a most forcible illustration of the extent to which the occupation of clerking and book-keeping is overstocked in this city. But a few months previous, the head of a business establishment, who wished some help in the way of writing, but in which some literary ability was required, advertised for an assistant, at a moderate salary, and having incidentally mentioned that the position might suit a lawyer or physician not in good practice, got more than a hundred applications, of which fifty-three were from young lawyers and doctors. Here was another illustration of an over supply of the professional or "genteel occupations." Another advertiser in the *Ledger*, who wanted a person to take charge of the editorial work of a weekly paper, got fifty-seven

applications, not more than half a dozen of the applicants being recognized newspaper writers, but nearly all of them being clerks, book-keepers and professional men. Still another advertised for two apprentices in a wheelwright and smith shop, in one of the semi-rural wards of the city, requesting applicants to give their address and age. He got three applications, but in every case the applicant was too old, two of them being over eighteen, and one nearly twenty. Still another advertised for an office boy, about fourteen years old, and had so many applicants that his place was crowded for more than five hours, and the applicants were of all ages, from mere children not more than twelve years old to full-grown men of twenty-one.

These are not very cheerful or encouraging signs. They are such, however, as every man and woman in Philadelphia should give attention to. The present generation of young men seem to have a strong aversion to every kind of trade, business, calling or occupation that requires manual labor, and an equally strong tendency towards some so-called "genteel" employment or profession. The result is seen in such lamentable facts as those above stated—a superabundance of elegant penmen, book-keepers and clerks of every kind who can get no employment, and are wasting their lives in the vain pursuit of what is not to be had; and a terrible overstock of lawyers without practice, and doctors without patients. The passion on the part of boys and young men to be clerks, office attendants, messengers, anything, so that it is not work of the kind that will make them mechanics or tradesmen, is a deplorable sight to those who have full opportunities to see the distressing effects of it in the struggle for such employments by those unfortunates who have put it out of their power to do any thing else by neglecting to learn some permanent trade or business in which trained skill can always be turned to account. The applications for clerkships and similar positions in large establishments are numerous beyond anything that would be thought of by those who have no chance to witness it. Parents and relatives, as well as the boys and young men themselves, seem to be afflicted with the same infatuation. To all such we say, that the most unwise advice you can give to your boy is to encourage him to be a clerk or a book-keeper. At the best, it is not a well-paid occupation. Very frequently it is among the very poorest. This is the case when the clerk is fortunate enough to be employed; but if he should happen to be out of place, then comes the weary search, the fearful struggle with the thousands of others looking for places, the never-ending disappointments, the hope deferred that makes the heart sick, the strife with poverty, the humiliations that take all the manhood out of the poor souls, the privations and sufferings of those who depend upon his earnings, and who have no resource when he is earning nothing. No father, no mother, no relative should wish to see their boys or kindred wasting their young lives in striving after the genteel positions that bring such trials and privations upon them in after life.

How do these deplorably false notions as to choice of occupation get into the heads of boys? Why do they or their parents consider it more



"genteel" or desirable to run errands, sweep out offices, make fires, copy letters, &c., than to make hats or shoes, or lay bricks, or wield the saw or jack-plane, or handle the machinist's file, or the blacksmith's hammer? We have heard that some of them get these notions at school. If this be true, it is a sad perversion of the means of education provided for our youth, which are intended to make them *useful*, as well as intelligent members of society, and not useless drags and drones. Should it be so, that the present generation of boys get it into their heads that, because they have more school learning and book accomplishments than their fathers had, they must therefore look down upon the trades that require skill and handicraft, and whose productions make up the vast mass of the wealth of every country, then it is time for the Controllers and the Directors to have the interior walls of our school houses covered with maxims and mottoes, warning them against the fatal error.

The foregoing article, taken from the editorial columns of the Philadelphia *Public Ledger*, furnishes a sequel to that taken from the *German-town Telegraph*, and published in our February number. The extreme points in the argument are, that four hundred and eighteen persons should have applied for a clerkship in a "genteel occupation," whilst only three individuals applied for an apprenticeship to a wheelright. Perhaps if an advertisement had been published for a man or a boy to go to work on a farm in a rural district, not one would have applied. As this is a matter in which agriculture, horticulture and mechanics are deeply interested, we deem it a proper subject to discuss in the columns of this journal. There certainly is a very morbid feeling fostered by the people of some localities in our Republic, in regard to the *respectability* of human occupations, in utter violence of the sentiment that—"Worth makes the man, the want of it the fellow." This feeling is, however, not only entertained by those who seem to despise the manual labor occupations and those who work therein, but laboring men themselves look upon some occupations as more respectable than others. Now this is all wrong, and the legitimate result of wrong modes of thinking on the subject. Society in its complex form may be regarded as a *man*, and as in the physical and mental constitution of a man there are various functions and various members or functionaries to perform their offices, all dependent upon each other, and sympathizing with each other, so is it also in society. God has created men with a variety of abilities, differing from each other, because such a constitution of men is necessary to the progress and well-being of the whole. One set of men may perform the functions of the brain of society, another the eyes, the mouth, the arms and the feet; but no one of these is independent of the others,

any more than the brain is independent of the cranium that contains it, or the organs which convey sensation to it. Neither is the eye, the ear, the tongue, or any member independent of those other members which assist them in executing respectively their legitimate functions. There may be different *degrees* in the functions of the human system, but these are circumstantially but degrees of physical altitude; no one is *morally* better than the other, all are necessary to the general harmony. Now we have abundant testimony, both in nature and in revelation, that such, the Deity intended, should be the moral and economical construction of society; and that it is not so, is owing to the perversions and circumventions of merely human agencies; and such a deranged condition like that exhibited in the *Ledger* article, is the consequence. Everybody seems to be desirous of rushing into the province of the nose of society, making it a great, unwieldy and bloated member, and thereby destroying its usefulness altogether, besides making a wreck of its symmetry.

But this question presents another important phase—a rather deprecatory one; and the more so, because under our assumed free and progressive institutions, there seems to be no remedy for it. There is a constant effort to get into the sheep-fold some other way than through the door; and as going through the door may be the longest way, those who "climb over," often have the advantage of those who enter in the regular way. Complaints are made over and over again, by those who have served a regular apprenticeship to a mechanical calling, and have devoted their best years to it, that the profits are often carried off by those who have never been bred to it, who have no respect for it, and who do not identify themselves with it, any farther than to huckster in its emoluments; and therefore there seems to be no encouragement to young men to learn trades. If this be a wrong condition of things, that wrong has been instituted or brought about through the assistance of mechanics and laboring men themselves, for nothing can be more true than this, that no man, nor set of men, could successfully and profitably conduct a mechanical occupation—in the absence of an experimental knowledge of that occupation—if they were not supported in it by those who *have* such a knowledge of it. If we mistake not there are governments on the continent of Europe, under which no man is allowed by law to carry on a mechanical occupation without himself having been a graduate of that occupation through a regular apprenticeship to it; and the evil of which so many complain in this county, will probably

never be corrected until a similar system is established here.

As such a system, however, coming from the old obsolete governments of Europe, would seem to be retrogressing in our American eyes, and would also appear to trench upon human freedom, it perhaps never would become popular enough to find an initiator or advocate among our patriotic lawmakers or our political economists. The maxim "Let the shoemaker stick to his last," may, as a general rule, be a wholesome one, but we think it would be an arbitrary exercise of power to compel a man to follow a certain vocation all his life, merely because he had been first educated therein; for many men mistake their true function in early life, and only attain to it after the experiences of subsequent years. If a professional man succeeds in life better as a farmer or mechanic, than he did in his original vocation, it may only prove that he had previously mistaken his function, or may have yielded to circumstances which he could not control at the time. The same may be true also of the farmer or mechanic who adopts a profession, or one who may change from one mechanical branch to another. Still the fact that mechanics are so frequently supplanted in the patronage and profits of their calling by those who have not been bred to it, but who possess the capital and social influence to monopolize it, is not a pleasant aspect for mechanical contemplation, and must occasion the disorderly state referred to in our extract. There are very few American boys now engaged in learning trades, compared to what there were thirty or forty years ago in the same ratio of population. Take shoemakers, tailors and hatters as the rule, and there is not *one* apprentice now, to where there were *thirty*, that many years ago. Our supply of mechanics, in at least two of these occupations, are almost entirely furnished by the emigration from Europe; and although in their mother country, they perhaps never thought of finding employment, except under one who had been himself bred to their respective callings, yet when they reach our shores, and find wages so much better than they were in their fatherland, they accept employment under any person who pays them their wages, no matter who or what he may be. Nor can this state of affairs be properly regarded as the *source* of the evil complained of. The evil originates in the fact that American parents, from some cause or other, entertain unfavorable notions in regard to mechanical occupations, and inculcate, inferentially if not by precept, the notion that it is not "respectable" to be a mechanic. And no doubt from this standpoint too, the patronage of the "genteel profes-

sions" is extended towards those who have never been contaminated by having learned an "ungenteel vocation." Mechanics like other men desire to rise; but if they never can rise above being mere "hewers of wood and carriers of water," then there must be a sparseness of mechanics, and a redundancy of clerks and professional men. But this evil does not only effect the mechanical occupations; but it also affects agricultural and rural occupations, and makes society an upstart, flippant, and tinselled unsubstantiality, if not a downright hypocrisy.

[From Scientific American.]

### LIGHTNING RODS.

MESSRS. EDITORS:—I notice an article in your paper (No. 3, current volume) headed "Are Pointed Lightning Rods any Protection?" Allow me to ask the question: Is a lightning rod, as commonly erected, any protection at all? I wrote an elaborate article on this question, founded on experience and observation, ten or twelve years ago, for the New York *Tribune*, showing that they were not only of no use, but really a dangerous contrivance often, bringing the thunderbolt (electrical explosion) upon the building when it would have gone some other place had not the rods attracted it to the building. I had a personal conversation with Professor Henry soon afterwards on the subject, and he expressed the same opinion you quote, to wit: "The office of a lightning rod is to protect a building from a discharge from the heavens. As a general thing its effects upon a distant cloud must be too small to silently discharge its redundant electricity, though in rare instances it is possible that it may so reduce the intensity of the cloud as to prevent a discharge, when without such reduction a discharge would take place."

That was the ground I had taken in my article, and upon that showed that the lightning rod did not fulfill its intended duty when it received electrical explosions, but frequently caused the shattering of buildings and setting barns on fire. In a five years' record I kept of lightning strokes in Lancaster county, over two-thirds of the cases had lightning rods mounted, and six barns out of ten were burned to the ground, with lightning rods mounted; that is ten barns burned up, six of which were provided with rods and four had none. About that time a large number of buildings in New York and Boston suffered from electrical explosions, although surmounted by rods, and it was these stubborn facts that induced me to write to a widely published paper the science and facts in the case. The only counter article on the subject that I learned of, was from Mr. Quin-

by, who simply stated that the cases I made reference to "were not surmounted with rods of his construction." Now for the facts of the science. The discharge generally comes from the cloud to the earth. When it passes within tractive distance of a tractator, which may be a lightning rod or other metallic prominence, or any projecting pointed wood or stone, it will fly to that, at an angle to its previous course. When in such case it strikes the lightning rod, it is like trying to knock the discharged cannon ball away from your person with the bayonet of your musket instead of drawing the charge from the cannon with the screw-rammer, or plugging up the prime hole with a rat-tail file.

The legitimate office of the lightning rod is to draw the electrical discharge from the cloud silently. That is the only scientific efficiency of the lightning rod, and the question is how far from its point will the rod disarm this pending surcharge of the electrical cloud? Clouds rarely come within fifty or one hundred feet of the tops of houses and barns, oftener over one thousand to fifteen hundred feet. Will any electrician or lightning rod maker claim for his rod the power of disarming a cloud one thousand feet above it? Professor Henry said it *may* disarm it by induction. I will not dispute this theory as applied within reasonable distance, say within fifty feet of the point of the rod. Mr. A. George, of Philadelphia, a philosophical instrument maker, and myself saw a lightning rod illuminated at its point for several seconds at a time, one night when a thunder shower was passing over the city, but it was a remarkable atmosphere—hot and sultry, and the clouds appeared to be brushing the chimney tops. That rod was performing its legitimate office. Professor Henry mentioned to me a similar instance he witnessed on the rod of the Smithsonian Institute; nevertheless that building has been twice struck by electrical explosions, and the rods on it are put up in the most approved scientific order. With the point of a pen-knife, or a cambric needle, you can draw the charge from the prime conductor of an electrical machine silently at a distance of ten or fifteen inches, but not that many feet, hence there is a very limited distance allotted to the withdrawing power of a lightning rod in drawing off a surcharge of electricity silently.

Tall trees near a building are a better protection to it than a rod surmounting the building. The top points of the tree, when elevated above the top of the building, will draw a bolt to the tree, though the bolt is moving toward the roof of the building. I examined one case where the bolt dashed into the top of a buttonwood tree

standing in front of a one-story house. The house had a shingle roof, with a sheet of tin about four feet from the eaves, stuck in to replace a rotten shingle. The electricity ran down a main branch of the tree to its crotch, and tore off the bark there, and thence jumped over about fifteen feet, and lighting on the sheet of tin above-mentioned, made a hole in the tin as if a chestnut burr had been fired through, turning down eight points of tin into spiral coils, or burrs, around the hole, and from thence jumped four or five feet down to the tin water conductor, perforating that a dozen or more places about the size of No. 6 shot—running right and left of the water conductor, and at the closed end jumped to the corner of the house, tearing off splinters and expending itself on the corner bricks; while at the other end it ran down the spout jumping from its end eighteen inches on to an iron water pan, displacing that, and burrowing into the earth, under the pan, to the depth of a foot. There was no lightning rod on, nor within two hundred feet of the building. I examined a number of cases where tall trees drew the explosion away from the tops of buildings, as the directions of the bolts and the impact upon the trees plainly indicated.

After a five years' investigation of the subject, I took the lightning rods down from two houses I owned, looking upon them as decoy ducks to the errant thunderbolts that might happen in that direction.

A lightning rod, or protector from lightning, either from a pending surcharged cloud, or a bolt, to be efficient, should be elevated on a mast or pole as high as possible—better one hundred and fifty feet high than seventy-five feet—and it ought to stand a little distance from the building, or buildings, surmounted with a metallic ball and finely-pointed gold or platinum point; it will then silently draw off the surcharge from a proximate cloud, and will also draw a stray bolt to the ball and rod that may be moving in the direction of the building. By bolt, or thunderbolt, the intelligent reader will understand me to mean electrical explosion, in distinction from surcharges, or surcharged cloud. A bolt is exploded electricity; that is to say, the cannon ball shot out of a Jupiter gun; surcharges or surcharged cloud is the cannon ball lying quietly within the cavity of Jupiter's cannon, but ready to go off at any moment that the match of electrical traction comes within its reach.

As regards the interruption of conduction by paints, or other substances on the surface of the rods, I would say that I have often discharged an electrical battery with a pair of fire tongs in my bare hand, and never felt the least effect upon my

bare hand. A rough piece of iron would, no doubt, let some pass off internally—the fire tongs being smooth conducted it all.

Such are the stubborn facts and science of the facts of electrical forces, as exhibited in thunder bolts and lightning rods, and if I have stated any controvertible points they should be pointed out for the benefit of mankind, by some one better acquainted with the subject than your correspondent.

JOHN WISE.

Lancaster, Pa.

### CURIOUS EFFECTS OF PINE TREES ON THE SOIL.

A remarkable instance of the effects of pine trees on the soil in which they grow has been published in the Woods and Waters Reports of the north of France. A forest near Valenciennes, comprising about eighteen hundred acres of scrub and stunted oak and birch was grubbed up in 1843, and replaced by Scotch firs (*pinus silvestris*). The soil, composed of silicious sands mingled with a small quantity of clay, was in some places very wet; it contained two or three fine springs, from one of which flowed a small stream. The firs succeeded beyond expectation, and large handsome stems now grow vigorously over the whole ground. It was in the early stages of their growth that the remarkable effect above referred to was noticed. The soil began to dry; the snipes that once frequented the place migrated to a more congenial locality; the ground became drier and drier, until at last the springs and the stream ceased to flow. Deep trenches were dug to lay open the sources of the springs, and discover the cause of the drying up; but nothing was found except that the roots of the firs had penetrated the earth to a depth of five or six feet. Borings were then made; and six feet below the source of the spring, a bed of water was met with of considerable depth, from which, it was inferred, the spring had formerly been fed. But in what way its level has been lowered by the action of the firs could not be determined, and is still a matter of speculation. But the fact remains, and may be utilized by any one interested in tree culture. For years it had been turned to account in Gascony, where the lagoons that intersect the sandy dunes have been dried up by planting the *Pinus maritimus* along their margin. Hence we may arrive at the conclusion that while leafy trees feed springs, and maintain the moisture of the soil, the contrary function is reserved for spine or needle bearing trees, which dry the soil, and improve its quality. Our War Office might perhaps do well to take note thereof, seeing that the forts now building at the mouth of the Medway show

a tendency to sink into the soft marshy soil. If the ground can be consolidated by plantations of the maritime pine, it would be good economy to have them planted.—*Chamber's London Journal*. Altheas, which flower on the young wood, cannot be too severely cut in, looking to that operation alone.—*Gardener's Monthly*.

**SPRUCE UP.**—If you get a moment to spare, spruce up: put that gate on its hinges; put a little paint on the picket fence you built last year; trim up about your door-yard—make it cosy and inviting. Don't say you can't find time to attend to these things. The fact is, you have no right to be slovenly. Your wife and children will be happier, your farm will sell for more money in the market, and will be worth more to you at home, if you devote an odd hour now and then to sprucing up.

**TO KEEP CLEAR OF BED BUGS.**—Take the whites of four eggs and ten cents worth of quicksilver, put them into a bowl and beat to a perfect froth. Take a feather and dip into this preparation, and apply to every part of your bedstead where bugs conceal themselves; do this once a year, and you will never see a bed bug in your house.

**HAY REQUIRED FOR COWS.**—After an experience of 70 years, a writer in the *N. E. Farmer* says that good cows will eat on an average, 20lbs. of hay per day when giving milk, and 15lbs. when dry. Not by guess-work, but tested by actual weighing for months at a time. They will pay well for their keeping by yielding an average of 6 quarts of milk per day throughout the year. He estimates summer pasture at 50 cents per week, and milk at 3½ cents per quart.

**MANURIAL POWER OF SALT.**—A correspondent of the *Journal of Agriculture* says he finds his clay-loam ground increased more in productiveness by the use of eight bushels of salt to one bushel of plaster to the acre than from the application of animal manure. Others have been equally benefitted by the application. Perhaps a judicious mixture of both would secure the best results.

**TO DRY FRUIT.**—Take two frames and glass used for hot-beds, or "cord-frames," and place them over a clean gravel-bed; inside arrange shelves on which to place the fruit. After this you need not give the fruit a second thought, except to take it out when dried. It is secure from flies and other insects, rains or dew, chickens and small children, nor can it be burned up.

# World Mutual Life Insurance Company,

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Judge A. L. HAYES.

Col. WM. L. BEAR, Prothonotary.

J. F. LONG & SON, Druggists.

*No farmer is justified in exposing his creditors, his wife, or his children, to the loss certain to occur to them upon his death, without a Life Insurance Policy for their benefit, and in no Company can this be done with more safety and under better management than in the above. See one of their Agents and have him explain all about it.*

\$200.

\$200.

HARVEST OF 1869.

**66 "THE VALLEY CHIEF"**

## A COMBINED SELF-RAKING REAPER AND MOWER

After our success in the Harvest of 1868, in pleasing our customers with a neat, light, durable, and a complete Combined Harvester, we again come into the market for the Harvest of 1869 with our VALLEY CHIEF, feeling a great confidence in its superiority.

We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine is built with an eye to convenience, simplicity and durability. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower with a first-class Self-Raking Reaper, thus giving our customers a simple, strong and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

**MARSH, GRIER & CO.**



LANCASTER, June 25th, 1868.

EDITORS EXPRESS: Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business.

H. B. PARRY.

## W. M. WHITESIDE, DENTIST,

Office and Residence,

EAST KING STREET,

Next door to the Court House, over Fahnestock's Dry Goods Store,

LANCASTER, PENNA.

*Teeth Extracted without pain by the use of  
(Nitrous Oxide) Gas.*

## BOOKS AND STATIONERY.

A Full assortment of

SCHOOL, MISCELLANEOUS, AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

## STATIONERY,

WHICH WILL BE SOLD AT

## GREATLY REDUCED PRICES,

On account of removal April 1st, 1869, to

No. 52 North Queen Street,

(KRAMP'S BUILDING)

Four Doors above Orange Street.

Subscriptions received for all the Agricultural and Horticultural Magazines.

J. H. SHEAFFER'S

Cheap Cash Book Store, No. 52 N. Queen Street, LANCASTER, PA.

## Dr. N. B. BRISBINE,

No. 93 EAST KING STREET, ABOVE LIME.

The Doctor pays special attention to all old obstinate diseases, such as Consumption, Liver Complaint, Dyspepsia, Rheumatism, all diseases of the Heart, Head, Throat, Lungs, Stomach, Bowels, Kidneys, Nervous Debility, General Debility, &c. The doctor makes examinations of the Urine. Consultation Free.

## S. WELCHENS, D. D. S., SURGEON DENTIST,

Office and Residence,

HOWELL'S BUILDING, No. 65½ NORTH QUEEN ST.,

Half a square south of the R. R. Depot.

Twenty Years' Successful Practice in Lancaster

The Latest improvements in INSTRUMENTS and TEETH and the very best material, Warranted in all operations.

TEETH EXTRACTED WITHOUT PAIN with the use of *Nitrous Oxide Gas*, *Ether*, or the *Ether Spray*.

TERMS, as low as any in the city, when *low priced material* and *low priced work* are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

S. WELCHENS, D. D. S.

## THOS. J. WENTZ,

SUCCESSOR TO

WENTZ BROTHERS,

SIGN OF THE BEE HIVE,

No. 5 EAST KING STREET, LANCASTER, PENN'A.,

DEALER IN

FOREIGN AND DOMESTIC DRY GOODS,

GLASS AND QUEENSWARE,

Carpets, Oil Cloths, Window Shades.

SPECIAL ATTENTION PAID TO

LADIES' DRESS GOODS

Shawls and Embroideries, Cloths and Cassimeres, Handkerchiefs, Gloves and Hosiery, Best Kid Gloves.

New Goods Received Daily!

The Choicest of the Market, and at the Lowest Possible Prices.

REMEMBER THE PLACE TO BUY.

THOS. J. WENTZ,

Bee Hive Store, No. 5 E. King St.

## G. J. GILLESPIE,

DEALER IN

FOREIGN AND AMERICAN WATCHES,

IN GOLD AND SILVER CASES,

CLOCKS OF EVERY DESCRIPTION,

Jewelry in all its Shapes and Forms,

SILVER WARE, designed for Bridal Presents  
BRACKETS, TOILET SETS, VASES, SPECTACLES,  
GOLD PENS, &c., &c. &c.  
No. 10½ West King Street, opposite the Cross  
LANCASTER, PA



# HARDWARE!

**Stoves!**

**Cedarware!**

**Housekeepers' Furnishing Goods!**

The undersigned at their old established stand in

**WEST KING STREET,**

are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

**The Largest and Best Selected Lot of**

**STOVES,**

at Manufacturers' Prices. Also, every other article kept in a first-class Hardware-Store.

**A FULL STOCK OF**

**Saddlers', Coachmakers' and Blacksmiths' Tools and Materials.**

**BUILDERS** will find a full supply of every thing suited to their wants at **LOWEST FIGURES.**

**CLOVER, TIMOTHY AND FLAX SEED,**

**BOUGHT AND SOLD.**

**STEINMAN & CO.**

P. E. GRUGER.

J. P. GRUGER.

**GRUGER BROTHERS,**

**MARBLE MASONS,**

**14 South Queen St., Lancaster, Pa.,**

Have always on hand or will furnish to order at **SHORT NOTICE,**

**MONUMENTS,**

**TOMBS,**

**GRAVE STONES,**

**&c., &c.**

We pay particular and personal attention both to the **SELECTION OF THE MATERIAL** and the **EXECUTION OF OUR WORK**, and our facilities now are such that we can guarantee our customers the very best work, at the same, and often **Lower Prices**, than are usually paid elsewhere for inferior productions.

**Lettering**

**in**

**English**

**and**

**German,**

**ELEGANTLY AND CORRECTLY DONE.**

We earnestly invite our country friends to give us a call.

# SHULTZ & BRO.

Manufacturers, Wholesale and Retail Dealers in

**HATS,**

**Caps and Furs,**

**LADIES' FANCY FURS,**

**HOODS,**

**TRIMMED GLOVES AND MITTS,**

**Gents' Gloves, Capes and Collars,**

**Fancy Robes,**

**BLANKETS, &C.**

**20 North Queen Street,**

**LANCASTER, PA.**

# AMERICAN WATCHES



**H. Z. RHODES & BRO.,**

*No. 23 West King Street,*

late the Lamb Hotel,  
AND OPPOSITE COOPER'S HOTEL,

**LANCASTER, PA.,**

**DEALERS IN**

**AMERICAN & IMPORTED**

**WATCHES,**

**SILVERWARE,**

**JEWELRY.**

**CLOCKS AND SPECTAGLES.**

# LIFE INSURANCE AGENCY!!

THE UNDERSIGNED REPRESENTS THE  
**BROOKLYN LIFE INSURANCE COMPANY,**  
AND ALSO THE  
**NORTH AMERICAN**  
**Life and Accident Insurance Company,**

Both stable and well established companies, the former having a capital of \$1000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

All desirous of securing insurance upon their lives can do so by calling upon the undersigned.

**ALLEN GUTHRIE, Agt.,**

East Lemon Street,  
LANCASTER, PA.

## REED, M'GRANN & CO., BANKERS,

LANCASTER, PENN'A,

Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

Sell Bills of Exchange on Europe and Passage Certificates.

Receive Money on Deposit and pay Interest as follows:

1 month, 4 per cent.,	6 months, 5 - per cent.
3 " 4½ " "	12 " 5½ " "

### FOR SALE AT

Chas. A. Heinitsh's Drug Store, 13 E. King St.,  
LANCASTER, PENNA.,

## German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

**GERMAN VEGETABLE OR UNRIVALED CONDITION POWDERS**

For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hidebound, Loss of Appetite, &c.

**PERSIAN INSECT POWDER.**

A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

**PYROLIGNEOUS ACID.**

A substitute for curing Beef, Pork, Hams, Tongues, Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

**CHARLES T. COULD,**  
CHAIR MANUFACTURER,

No. 37 North Queen St., Lancaster,

(NEXT DOOR TO SHOBER'S HOTEL,)

Old Chairs Re-painted and Repaired.

**CHRISTIAN WIDMYER,**  
**CABINET MAKER,**  
S. E. Cor. East King & Duke Sts., Lancaster.  
Cabinet Work of every description and a full assortment of Chairs constantly on hand.  
All Warranted as Represented. £

**JACOB ROTHARMEL,**  
PREMIUM  
**BRUSH MANUFACTURER,**  
DEALER IN  
Combs and Fancy Articles,  
No. 9½ North Queen Street, Lancaster, Pa.

**CRUCER & RICE,**  
DRUGGISTS & APOTHECARIES,

No. 13 WEST KING STREET,

NEXT DOOR TO STEINMAN'S HARDWARE STORE,

Lancaster, Pa,

Have always on hand Pure, Reliable Drugs and Medicines, Chemicals, Spices, Perfumery and Toilet Articles. Also Flavoring Extracts of their own Manufacture, and of unsurpassed quality.

Sole Agents for HASSON'S COMPOUND SYRUP OF TAR, the best Cough Medicine in the market. We have also on hand in season an assortment of Landreth's Warranted Garden Seeds. The public can rely upon ALWAYS GETTING WHAT THEY ASK FOR AND NO SUBSTITUTES.

**GEO. F. ROTH,**  
UNDERTAKER,  
Corner South Queen and Vine Streets,  
LANCASTER, PA.

Coffins of all sizes always on hand, and furnished at Shortest Notice.

**J. B. KEVINSKI,**

DEALER IN

Pianos, Organs, and Melodeons,

AND MUSICAL INSTRUMENTS GENERALLY,

A large assortment of Violins, Flutes, Guitars, Banjos, Tamborines, Accordions, Fifes, Harmonicas, and Musical Merchandise always on hand.

**SHEET MUSIC:** A large stock on hand and constantly receiving all the latest publications as soon as issued.

**MUSIC BY MAIL:** I would inform persons wishing Music, that Music and Musical Books will be sent by mail free of postage when the marked price is remitted.

**DECALCOMANIA,** or the art of Transferring Pictures. Can be transferred to any object. I would call especial attention of Coachmakers to my stock of Decalcomania.

# LANDIS & CO., KEYSTONE AGRICULTURAL WORKS

James Street, Lancaster, Pa.,

ARE PREPARED TO DO ALL KINDS OF

## MACHINE WORK,

BUILD LARGE AND SMALL ENGINES,

SHAFTING, PULLEYS, HANGERS, HORSE & WATER-POWERS,

MILL GEARING,

And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

## LARGE ASSORTMENT OF MACHINERY

Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works, in which the best work is turned out.

They also announce that they are now prepared to supply their

## NEW GRAIN SEPARATOR

TO ALL CUSTOMERS.

This Machine requires LESS POWER, does MORE WORK, and is considerably CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

## Gas and Steam Fittings,

Made to order on a new set of STANDARD DIES.

Repairing of all kinds promptly done at reasonable rates.

Give us a call, and we will endeavor to please our patrons.

FRANK LANDIS,  
EZRA F. LANDIS,  
JACOB LANDIS.

# Diller & Groff's Hardware Store,

**SIGN OF THE ANVIL,**

No. 8 East King Street, Lancaster City, Penna.

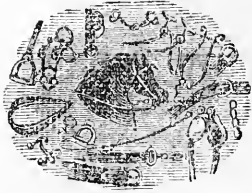
DEALERS IN

Foreign and Domestic Hardware,

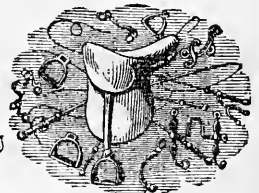
Such as Building Material, Paints, Varnishes, Oils, Glass, Coach Trimmings, Stoves,  
Iron and Steel, &c., &c., &c.

**HOUSE FURNISHING GOODS.**

TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



## AMOS MILEY'S HARNES MANUFACTORY,



No. 37 North Queen St.,

NEXT DOOR TO SHOBER'S HOTEL, LANCASTER, PA.

### SADDLES AND BRIDLES,

PLAIN AND FANCY

### COACH, BUGGY & CART HARNES,

WAGON GEARS, WHIPS, BUFFALO ROBES,

BLANKETS, TRUNKS, VALISES, CARPET BAGS, LADIES' & GENTS' SATCHELS,

Of all kinds constantly kept on hand or made to order. Repairing neatly done.

Also, Agent for BAKER'S HOOF LINIMENT, the best article for Sore Hoofs in the country.

## J. M. WESTHAEFFER,

### BOOKS, STATIONERY, FANCY GOODS, &C., &C.,

44, Corner North Queen and Orange Streets,

LANCASTER, PA.

N. B.—Any Book ordered can be sent by Mail to any address.

# TO BUILDERS!

# PLASTIC SLATE!!

The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimonials New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built; stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
7. The testimony of Wm. M'Gilvray & Co., published herewith, shows that it is not only fire-proof externally, but, is also a great hindrance to the spread of fire within.
8. It is much cheaper in first-cost than any good roofing now in use, and when all attendant expenses of the two roofs are estimated, costs only about half as much as the best slate, and it makes a better and closer roof.
9. For the roofing of foundries and casting-houses of blast furnaces, where there are gases of a very high temperature, which injures and destroys other roofs, this material is improved and seems to produce a better roof, (see certificates of Messrs. Grubb, Musselman & Watts, S. M. Brua and Wm. M'Gilvray.)
10. If in process of years cracks or leaks occur in Plastic Slate Roofs, they are about as easily repaired, as they would be to white-wash, needing only a brush and the Mastie, but no expensive labor of mechanics.

☞ The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Office of the Lancaster INQUIRER or EXAMINER & HERALD.

Persons wishing to examine PLASTIC SLATE ROOFS, and thus verify for themselves the following statements, are invited to call and inspect Roofs put on for the following persons, among many others:

LANCASTER—Thos. H. Burrows, Stuart A. Wylie, (Editor Lancaster Inquirer,) J. B. Schwartzwelder, Abraham Bitner Sr. MARIETTA—Henry Musselman & Sons, Myers and Benson. COLUMBIA—C. B. Grubb, (Furnace,) Columbia Gas Co., Samuel Shock, Pres't., Susquehanna Iron Company, Wm. Patton, Pres't., Samuel W. Millin. MOUNT JOY—Henry Kurtz, Dr. J. L. Ziegler, William Brady, J. R. Hofer, (Editor Mt. Joy Herald). CHRISTIANA—E. G. Boomell, Wm. P. Brinton, John G. Fogle. BART—William Whitson. BELLEMONTÉ P. O.—Robert P. McIvaine. PARADISE—Robert S. McIvaine, WILLIAMSTOWN—T. Scott Woods. EPHRATA—Dr. I. M. Groff. GORDONVILLE—Samuel M. Brua. CÆSARVON TWP.—Mrs. Fanny Mast. UPPER LEACOCK TWP.—Marks G. Menger, Christian R. Landis, Jacob R. Musser. LEACOCK TWP.—Isaac Bair, Levi Zook. WEST EARL—Christian Beiler. LEAMAN PLACE—Henry Leaman, Israel Rohrer. BUUNERVILLE—Aaron H. Brubaker. SPORTING HILL—Emanuel Long. LITIZ—H. H. Tshady, David Bricker. DUBLACH P. O., CLAY TWP.—Jonas Laber. MANHEIM BOR.—Nathan Werley, Samuel Ruhl. PENN TWP.—George Ruhl. WEST LAMPETER—Aldus C. Herr. ENTERPRISE P. O., EAST LAMPETER—Mark P. Cooper. STRASBURG BOR.—Hervey Bruckbill.

Orders for Roofing should be sent to

**Joseph Gibbons,**

LICENSEE FOR LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

Enterprise P. O., Lancaster County, Pa.

A. W. & J. R. RUSSELL, Lancaster, Pa.

Or MOSES LIGHT, Manheim, Lancaster county, Pa.

Or JOHN R. BRICKER, Litiz, Lancaster county, Pa.

ALDUS C. HERR, Lampeter, Lancaster county, Pa.

# WEEK'S WHEAT, (WHITE.)

Early Ripening, Hardy and very Productive!

We offer prime seed of this very early White Wheat, which we consider the most valuable variety of recent introduction, combining the hardness and early maturity of the Mediterranean, with the high flouring quality of the best White Wheats. Its straw is stiff, protecting it against the Fly, and it succeeds well in land of moderate fertility, yielding from 25 to 45 bushels, according to soil and season.

Prices; 1 bushel, (Sack included),	-	-	-	-	\$ 4.00,
" 2 " { " " }	-	-	-	-	7.50,
" 10 " { " " }	-	-	-	-	36.00.

We also offer a fine supply of FRENCH RED and WHITE CHAFFS, EXTRA EARLY JERSEY, ROCHESTER RED CHAFF, LANCASTER RED CHAFF, by the bushel and sack, and a number of other varieties in limited quantity.

Descriptive Priced Circular mailed free to applicants.

Edward J. Evans & Co.,  
Nurserymen and Seedsmen,  
YORK PA.

## THE GREAT AMERICAN COMBINATION

Button Hole, Overseaming  
AND

# SEWING MACHINE!

Is warranted to execute in the best manner, every variety of

SEWING, HEMMING, FELLING, CORDING, TUCKING, BRAIDING, GATHERING, QUILTING, OVERSEAMING, EMBROIDERING ON THE EDGE,

And in addition makes beautiful Button and Eyelet Holes in all fabrics, being absolutely the best FAMILY MACHINE in the world, and intrinsically the Cheapest, for it is two Machines combined in one by a simple and beautiful Mechanical Arrangement. This is, in fact, the only new machine in the market that embodies any substantial improvement upon the many old machines that are being forced upon the public.

Circulars with full particulars and samples of work done on this Machine, can be had on application at the

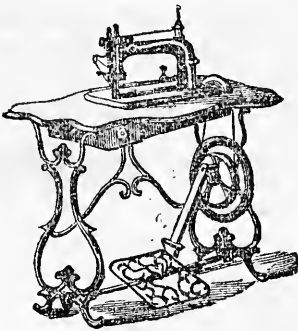
Sales Rooms of the Company,

S. W. Cor. 11th and Chestnut Sts., PHILADELPHIA.

Instructions given on the Machine gratuitously to purchasers.  
AGENTS WANTED TO SELL THIS MACHINE.

aug '69-ly

IT HAS NO EQUAL



### A. B. KAUFMAN'S INSURANCE AGENCY,

No. 1 EAST ORANGE ST.,

LANCASTER CITY, PA.,

Issues Life, and also, Policies against Fire and all other Accidents.

AGENT FOR THE OLD

CONN. MUTUAL LIFE INSURANCE COMPANY.

The Best Company in the World.

CAPITAL, - - - \$23,000,000.

### PEACHES! PEACHES!!

A heavy stock, 4 to 6 feet high, at low rates,

### ROSES! ROSES!! ROSES!!!

Best kinds in all the classes. Heavy stock of Prairies.

Large blocks of **CHERRIES, DWARF APPLES, PLUMS, APRICOTS, IRISH JUNIPER, ARBOR VITAE, &c., &c.,**

Full Line of Stock in every Department.

**Hoopes Bro., & Thomas,**

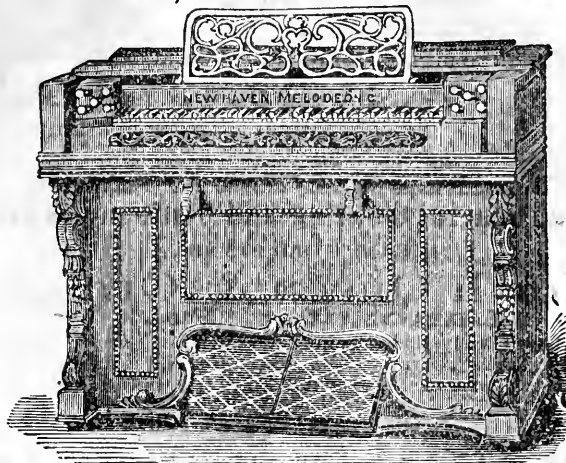
Cherry Hill Nurseries,  
WEST CHESTER, Pa.

N. B. The "BOOK OF EVERGREENS," by Josiah Hoopes, sent per Mail, prepaid on receipt of price, \$3.00. Address as above.



**"THE BEST THE CHEAPEST!"**

**"A ROUND, FULL RICH TONE!"**



FLUTO,  
MELODIA,  
BASSOON,  
BOURDON,  
MANUEL-BASS,  
EOLEON-FORTE,  
KNEE-TREMOLO.

PICCOLO,  
GAMBU,  
CLARINET,  
EOLEON,  
OCTAVES,  
PICCOLO-FORTE,  
KNEE-SWELL.

**"THE TEMPLE ORGAN"**

Is acknowledged by all who have examined it to be the most perfect Reed instrument ever introduced to the public, having been awarded the **FIRST PRIZE**, over all competitors, "for quality of tone and promptness of action." **IT COMBINES ALL RECENT IMPROVEMENTS**, and for **POWER, FULLNESS PURITY OF TONE, AND QUICK RESPONSE TO THE TOUCH**, surpasses all others in its close resemblance to the Pipe Organ. **Its Construction is entirely New**, and different from all other Reed Organs now in use, surpassing all in simplicity and equal to any in durability. The editor of the "TEMPLE OF MUSIC" says:

"It is a most magnificent instrument, and has many fine qualities to recommend it; among others, its stops, imitating most successfully many of the most useful in the pipe organ. The flute, the Piccolo, bassoon, clarinet and various others, are such perfect imitations that it would be difficult to distinguish them from the genuine at a little distance from the performer. We have for a long time seen the necessity for a reed organ that combined the qualities which we believe are contained in this; and we invite the severest criticism, not only as to its superior excellence as a musical instrument, but also as to its elegant finish, making it the most beautiful parlor instrument extant."

All the various styles for Church, Hall and Parlor, furnished to order, at manufacturers' prices, by their Agent,

**J. M. W. GEIST,**

No. 70 East King St., Lancaster, Pa.,

where the Organ may be seen, and details as to styles and prices obtained.

**MILLER & SMITH'S**  
STANDARD  
**SUPER PHOSPHATE OF LIME,**

THE GREAT FERTILIZER OF ALL CROPS,

MANUFACTURED FROM BONES, DISSOLVED IN SULPHURIC ACID. WARRANTED PERFECTLY FREE FROM ADULTERATION.

Our new Circular containing much valuable information, will be furnished free on application to

**MILLER & SMITH, Sole Manufacturers & Proprietors,**  
**AGRICULTURAL CHEMICAL WORKS,**

Office No. 8 South 5th St.,

READING, PA.

**The Best Work! The Lowest Prices!!**

**A. SCHINDLER & BROTHER,**

No. 76 North Queen St., Lancaster, Pa.

Gilders and Manufacturers of Looking Glasses, (Mantel, Pier Glasses, etc.) and Picture Frames of all kinds. Dealers in Chromo Lithographs, Steel Engravings and Water Color Paintings.

Gilt, Rosewood, and Walnut Frames of every description, and Square and Rustic. Room Mouldings, Cornices, etc., always on hand or made to order.

Also, Re-Gilding, repairing and inserting of Looking Glasses, etc., etc.

# THE FLORENCE SEWING MACHINES.

**THE BEST MACHINE FOR FAMILY USE.**

SIMPLE AND EASY TO LEARN AND NOT LIABLE TO GET OUT OF ORDER.

Capable of all varieties of sewing from the finest to the coarsest. Make the Lock  
Stitch alike on both sides, and use the least thread.

**W. F. DUNCAN Agent,**

No. 65 NORTH QUEEN STREET, LANCASTER, PA.

## S. S. RATHVON'S

Merchant Tailoring, General Clothing and Gentlemen's Furnishing Store,

(KRAMP'S OLD STAND),

Corner North Queen & Orange Streets,  
Lancaster, Pa.

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In Gold and Silver Cases which will be sold at prices which will defy competition. Also, a full assortment of

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of all kinds, which will warrant good and correct time-keepers.

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Manufactured expressly for our sales and warranted coin.

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THE

# Lancaster Farmer

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## The Lancaster Farmer,

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LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

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## Essays.

### VEGETABLE PHYSIOLOGY.

#### THE LEAF AS AN ORGAN OF VEGETATION.

The structure of the leaf carries with it the same characteristics, in regard to fabric, as does that of the main branch or the body of the plant. The difference being in chemical proportion. In the tree the woody tissue predominates, whilst in the leaf the cellular tissue, or what is termed the "parenchyma," is the leading fabric. The stem and rib of the leaf are of the harder texture, but the whole structure is so arranged as to meet in an admirable manner the function of elaborating the sap, prior to its office of nourishment and developing the fruit. There are leaves, such as the Palm for example, in which the woody tissue is largely in the ascendancy, whilst the Cactus is composed almost exclusively of parenchyma. They are both tropical plants, but their nature and habits being widely different, the structure of the leaf must conform to the laws which govern them. The drought and scorching sun of a tropical climate render their peculiar formation and texture necessary, lest the life of the plant be drawn out by rapid evaporation, through the very organs designed by nature to protect and

develop them. The Cactus holds its nourishment by virtue of the thickness of its leaves, or the mass of cellular tissue of which they are composed. The Palm being a higher organization, is protected by reason of the large proportion of woody tissue, and the immense surface of parenchyma its broad leaves expose to the external condition of growth.

In all trees and plants of rapid growth and open texture, where the cells are large and so arranged as to be capable of the transmission of air as well as sap, the leaves are generally larger and thicker, and hence better adapted to catch the dew and moisture of the atmosphere in climates where there is not much rain, or where the earth becomes parched and sterile. These peculiarities are much more perceptible in tropical than in temperate climates. In the latter we find trees and plants that are hardy and well calculated to withstand the congealing blasts of our severe and changable winter, yet in the leaf and stem both are very similar to those belonging to warmer and more open climates. These cases will always be found to partake to a very large extent of the nature of the denser organization. Many annual plant, of varied fabric flourish upon the same principle, in both climates, as those we referred to as being peculiar to the tropics alone.

Evergreens and fur-trees have leaves of a peculiar structure and shape. They seem to be elongations of the cells of which the trees are composed. The resinous nature of the sap of those trees renders the texture of the leaf almost equal to the parenchyma, or cellular tissue of the bark. The leaf is not deciduous as other leaves, but when shed at all, it seems to be more of the nature of the waste of the tissue through the bark, than by the ordinary receding characteristics of the sap. They meet the external conditions of growth, with the same facility of other trees, the difference being only in nature and character. They grow in almost any climate, the structure of the leaf being capable of producing and retaining the chemical constituents of the sap, without either a very rapid elaboration or evaporation.

Leaves of trees and plants, in the various stages or rather degree of organization, here in our own

climate, are of that well balanced structure and fabric which renders them at once perfectly capable of transforming the fluid that is gathered from the earth, and forced up through the cellular structure of the stem into the branches, thence to be spread out to the sunlight, when by a process of combustion the oxygen is set free, and carbonic acid gas is taken in, for the double purpose of sustaining the life of the plant, and evolving the fruit and the flower. And the more effectually to subserve this purpose, their position is horizontal, so as to present one surface to the ground and the other to the sky.

The utility of this relative position will be the better appreciated when we contemplate the anatomy of the leaf.

In its complete conformation the "leaf consists of the *blade*, with its *petiole* or *leaf-stalk*, and at its base a pair of *stipules*." Of these, the latter are frequently absent altogether, or else they fall away as the leaf expands. The petiole is very often wanting when the leaf is sessile, or has its blade resting immediately on the stem that bears it. Sometimes, moreover, there is no proper blade or expanded portion, but the whole organ is cylindrical or stalk-like. It is the general characteristic of the leaf, however, that "it is an expanded body." When cylindrical, the horizontal position is not at all necessary. The strata of parenchyma forming the epidermis, being of similar texture all around. The expanded leaf has one side for the sun, and the other for the earth, and both sides having distinct strata, yet of entire different structure.

"The microscope displays a magnificent difference in the parenchyma of these two strata. That of the upper stratum is composed of one, two, three, or several compact layers of oblong cells, placed endwise, or with their long diameter either perpendicular to the surface, while that of the lower is very loosely arranged, leaving numerous vacant spaces between the cells; and when the cells are oblong their diameter is parallel with the epidermis."

The wise and admirable provision of this compact stratum which forms the covering of the leaf, which is exposed to the sun, is apparent in the protection it affords, not only to the leaf itself, but to the very life of the plant. If it were open and porous as the lower stratum is, the heat of the sun would exhaust the entire supply of sap by evaporation. This upper surface of the leaf being composed entirely of parenchyma, will account for the color being deeper green than the lower.

Between these strata there is a loose parenchyma composed of layers of cells, so arranged

as not only to facilitate the circulation of the sap, but the transmission of air also. The air admitted into the body of the leaf by means of minute holes or stomata, as they are termed, and by this contact of the air with the crude sap, the process of elaboration is carried forward, and the combustion above referred to takes place.

All this, both in point of organic structure and functional power is very similar to the action of the lungs, and the elaboration of the blood in the animal. And just here is one of the principal lines of demarcation between the two kingdoms in a physiological point of view. Whilst the structure and the function are so strikingly similar, the chemical change is directly opposite. In this combustion oxygen is thrown off, and carbonic acid gas is inhaled or absorbed. Whilst in the same action in the case of the animal the oxygen is taken in and carbonic acid is exhaled. Agents, constitutionally different and mutually volatile and repellent, and yet by this admirable arrangement of nature, made to sustain life in both kingdoms.

The nice law of chemical equivalents, and its adjunct of mutual dependency, seem to be, in the leaf especially, controlling elements. As an organ of vegetation it is much more complicated in its organic structure than the root. Its function is consequently of a higher order, but being exposed to the changeable nature of the external condition of growth, and the danger which surrounds them, there are many safeguards required to protect the tender delicate tissues by which those equivalents are rendered capable of subserving the purposes for which they were intended by nature. When we consider that the spaces between those delicate cells are filled with air, and they communicate with each other throughout the leaf, and that a corresponding quantity of fluid must be retained as food for the plant, and yet a scorching sun and sterile soil, conspiring to *dry out* this minute life principle, we are disposed to seek for evidences of protection to the plant, which do not appear upon the surface, or to the naked eye. This we have in the "*stomata*."

These minute pores are spread over the under surface of the leaf in much larger number than upon the upper. Their object is to afford free communication between the external air and the whole interior of the leaf; and the fact that they are in such large number on the under surface, is but the provision of nature, which requires the peculiar position of the organ in order the more perfectly to perform its function. These pores are more equally distributed on leaves such as the Cactus, for instance, where the horizontal position is rarely assumed, and in which, indeed, it is

not necessary. Their existence at all, and in such large numbers, constitutes them at once the vital medium through which the whole power of vegetation is carried on. They are emphatically the "Breathing-pores," for they sustain the same relation to the life of the plant which the breathing-pores of the *Plura* sustain to the life of the animal. When the atmosphere is moist, and the plant is freely supplied with sap by the stem and root, the minute cells which guard these orifices are expanded, and the escape of moisture through the pores, and by evaporation keeps pace with the rapid circulation, and there is consequently a perfect healthy chemical equilibrium sustained.

This, of course, is the highest and most perfect process of nature, and gives evidence of the application of all the conditions of growth, not only in regard to soil, but to climate and culture.

When, however, this rich, full supply of the elements of vitality is withheld, and the parenchyma begins to be exhausted, so that there is danger of too much loss by this breathing or evaporating process, they are at once converted into guardian cells, and quickly collapse, so as to husband the resources for life and health, already stored away in the several tissues, which compose the main body of the plant.

The whole structure and functional capacity of the leaf, therefore, though ordinary and common to the naked eye and casual observer, is one of the finest and most beautiful pieces of mechanism in nature.

To show the immense surface these minute pores afford in the application of air and light and moisture, in an external way, to the general powers of vegetable vitality, it is only necessary to call attention to their amazing number in a single leaf. They are variously estimated at from 800 to 17,000 to the square inch of surface.

Their size, as well as numbers, vary greatly in different plants, so that no safe inference can be drawn of the comparative amount of exhalation in the different leaves, simply from the number of their stomata or pores.

In plants of full vigor and health, and where there is an acceleration of vital energy, the cells or pores which we have just been considering, frequently choke up by a too rapid deposit of the saline or mineral properties of the sap, and they accordingly wither, die and drop off. It is seldom, however, that this takes place to any considerable extent, where the plant is in perfect health and condition.

When nature and season have exhausted their powers, and when vegetation has subserved its purpose, and its elementary principles are reversed, the leaf, as all inert matter, meets a com-

mon end. Instead of its feeding upon carbonic acid gas as when in full growth and bloom, the autumn frost drive back the sap, the leaf is susceptible to the ravages of oxygen, and it soon discolors and drops to the earth. S. W.

## Agricultural.

### AGRICULTURAL IMPROVEMENTS.

Never have we felt more encouraged than at the present time as to the advancement of agriculture as a science and a progressive art. The days of empiricism seem to be passing away, and farmers now understand that a knowledge of the components of their soil, and of the crops they intend to raise, is necessary to ensure an economical and profitable production. But few intelligent farmers repudiate the use of books; they no longer believe that a fact is less a fact because it is printed. Deep plowing, sub-soil plowing, under-draining and the improved methods of planting special crops subject to weeds, with others, which may protect them, from such weedy growth, from their sudden germination, and consequently of the crop to be protected, are all passing into general use.

Farmers now know that an oat and carrot crop may be raised from the same piece of ground, and in the same season with less labor of weeding than if raised on two separate fields. An intelligent farmer can scarcely be found who does not know that his soil may be deepened by gradually increasing the depth to which he plows. All who have tried it are aware, and those who have not are more ready to believe that deeply sub-soiled lands never suffer from drought.

The fact that a proper rotation of crops is the proper rest of the soil, and that consequently fallows, are unnecessary, is no longer doubted by those who are entitled to the name of practical farmers. Practical men (and by such we do not mean mere farm laborers who have no knowledge beyond that necessary to enable them to handle a farm tool) know that if the soil be properly prepared, the grain crops never lodge from weak straw, and this, like every other fact in agriculture, is subject to remedy.

Practical men no longer find it necessary to move, because their lands have ceased to be good wheat lands. If such lands refuse that, or any other crop, they know how to ascertain the remedy required, and to apply it. The true value of farm-yard manures is becoming more understood, and those who understand the subject best will not apply them alone to soils requiring such amendments as are not to be found in barn-yard



manures in notable or sufficient quantity. If the soil is short of any one of the constituents of barn-yard manure, and replete with the other eleven constituents, that one constituent is now added, not by the addition of barn-yard manure and consequent waste of eleven-twelfths of its value, but by directly offering to the soil the missing ingredient. Thousands of acres that have been considered as un-wheat worthy, have been prepared and planted with that crop (after the requisite preparation), and with results entirely satisfactory to the operator.

The more intelligent class of agriculturists refuse to entertain a recipe proposing effects desired but without any attempt to explain the cause of action. Indeed agriculture can no longer be regarded as an art alone, it is now fairly entitled to the name of science; free from mystery and easily understood. Men now study agriculture as they do any other science and they repudiate empiricism as they would any other quackery.

Cattle feeders view cattle as organisms, the composition of which must be studied, and the requirements of which must be furnished to them in such relative proportions to each other as will produce the best and most profitable results. Farmers know that an animal cannot become strong and fine-boned if fed on crops raised from soils deficient of the very mineral substances, which go to form bones, and they therefore add such constituents to the soil as will supply this desideratum. Working and fattening cattle are no longer considered as entitled to the same class of food, but each receives that which will go to form the desired result. The milch cow, too, is fed with a strict view to the production of milk; and those materials of which milk is composed are resident in the food selected to produce it. In fine, farmers are rapidly learning that, like mechanics, they must possess on their farms the raw materials from which the manufactured articles derived are to be created.

WORKING FARMER.

### PLOUGHING ORCHARDS.

**EDITORS OF FARMER:** I propose to submit to you the result of my experiments in the ploughing of orchards, which may convey a hint to some of your readers. A few years ago I purchased, at a public sale, what I could not surmise for what it had been designed, but it resembled very much a whiffle-tree. It was not over eighteen inches long, with a clip in the middle and notches sawed out at the ends. Some time afterwards, while I was ploughing my orchard, and on nearing the trees they were in danger of having the bark

peeled off by the whiffle-tree, when the thought occurred to me that short whiffle-trees would answer the purpose better. I procured the instrument I had bought at the sale, and put it on the double-tree for the horse nearest the trees, and to my satisfaction I found it the very thing desired. I could then plough quite close to the trees without hurting them. Most farmers when ploughing, desire to plough as close to the fence as possible, and in doing so, find it difficult to plough the last furrow away from the fence, the ordinary whiffle-tree catching at the posts and jerking the horses in such a manner that it is a rather difficult task. By using a quite short whiffle-tree at least one furrow more can be taken away without touching the fence; any old whiffle-tree will do, the ends being sawed off and notches cut out to loop the traces on.

H. B. R.

## Horticultural.

### RAISING FOREST TREES.

Many of our Lancaster county farms are now entirely divested of their forests, many plantations not having as much as a single tree left for shade for men or beasts. A farmer lately sold the last two acres of timber on his farm, in West Lampeter, by the tree, ninety in number, bringing between five and six hundred dollars. One hickory tree sold for fifty-eight dollars. Timber is getting every year scarcer and more valuable. Some of the Western States have already passed laws to induce people to raise forests. Eastern Pennsylvania is becoming every year more denuded of its forest trees. Land is frequently reduced to cultivation which barely pays the trouble of so doing. If our land already under cultivation would be improved in such a way as to double the crops, then we could afford to leave some land lay in forest, or start young forests. There is nothing on a farm that gives more satisfaction than the planting and raising of trees, &c.

As this is the proper time to make a start to raise fruit and forest trees from seed, I will proceed to suggest some points to the readers of the FARMER, how they may raise fruit, ornamental and forest trees from seeds.

This is the time to gather apple and pear seed, to be deposited in moist sand until next spring. When the seeds are planted they will come up as readily as corn. Peach seeds must be exposed on top of the ground in the garden until next spring, when they can be planted where most suitable. Walnut and shellbark hickory nuts must be treated in like manner. The acorn is very critical and



must be stored away neither too dry nor too wet, in order to preserve vitality till spring; or it may do to bury them under the surface of the earth till the middle of April. I have treated chestnuts in that way, but to my surprise when I examined them in the middle of April, they had already sprouted and I lost a great many sprouts in breaking from the nuts. My young chestnut trees are growing as vigorously as if they had spontaneously began their growth in the forest.

Locust seed can be gathered between this time and next spring when it should be thoroughly scalded before being planted.

The sugar maple, tulip, poplar, magnolia, and similar seed can now be gathered and exposed in the ground until next spring; conifer seed can be gathered all winter and the seed is more difficult to grow than all other seed. It is best to start them in well mulched ground, and when these evergreens come up first, you can scarcely discern them from weeds; the hot sun must be kept entirely from them during the middle of the day or they will perish. The hemlock spruce is one of the tenderest of evergreens. When growing spontaneously in this county, it is invariably found on a northern exposure of streams.

May we not hope that some of our readers will inaugurate a beginning to the growing of forest trees from seed, and in time report their experiments to our society.

L. S. R.

### SCRIPTURE, FARMING AND HORTICULTURE.

"I have planted, Apollos watered, but God gave the increase." Those words of Scripture will apply to us as a society while we are striving to be successful in our efforts to grow the various fruits and products of the earth to perfection. Let us search the Scriptures, and see if we may not derive from them some excellent information how to meet with the very best results in those noble pursuits (given unto man by God himself,). And in order to have our labors crowned with the blessings of heaven, let us look to a higher power than the arm of flesh.

In the Bible, God tells us: "Ye shall not, therefore, oppress one another, but thou shalt fear thy God, for I am the Lord your God, wherefore ye shall do my statutes, and keep my judgments, and do them, and ye shall dwell in the land in safety, and the land shall yield her fruit, and ye shall eat your fill, and dwell therein in safety," &c. "Then I will give you rain in due season, and the land shall yield her increase, and the trees of the field shall yield their fruit, &c., and ye shall eat your bread to the full," &c. "I will give you the

rain of your land in his due season, the first rain and the latter rain, that thou mayest gather in thy corn, and thy wine, and thy oil, and I will send grass in thy fields for thy cattle, that thou mayest eat and be full," &c.

People often wonder why it is that our fruits, &c., are attacked with blast, mildew, caterpillars, curculios, weavels, flies, bugs, and many other insects that are very destructive to the crops, &c. Now when we look at the wickedness that covers the land; how people have robbed God of the honor due unto his name, and have taken it all unto themselves, and have forgotten God and gone astray from him, need we at all wonder why God suffers a curse to come upon us which we can not prevent nor remove with all our united efforts, remedies, insect exterminators, applications, or preventives, &c. Nevertheless, we have great reason to thank God for his bountiful providence towards us the present season. Yet let us not forget to seek unto God, and unto Him commit our cause, for he says in the Bible: "Ye have robbed me, even this whole nation, (this is true at the present time.) Bring ye all the tithes into the storehouse that there may be meat in my house, and prove me now herewith, saith the Lord of hosts, if I will not open you the windows of heaven, and pour you out a blessing, that there shall not be room enough to receive it. And I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground, neither shall your vine cast her fruit before the time in the field, saith the Lord of hosts." I cannot at present relate the innumerable blessings promised unto those that shall hearken unto the voice of the Lord their God, and serve him with joyfulness and gladness of heart for the abundance of all things. "The Lord shall open unto thee his good treasure in the heaven to give the rain unto thy land in his season, and to bless all the work of thine hand," &c.

God said on a certain occasion: "And I will break the pride of your power, and I will make your heaven as iron, and your earth as brass, and your strength shall be spent in vain, for your land shall not yield her increase, neither shall the trees of the land yield their fruits. And if ye walk contrary unto me, and will not hearken unto me, I will bring seven times more plagues upon you, according to your sins," &c. "If I shut up heaven that there be no rain, or if I command the locust to devour the land, or if I send pestilence among my people. If my people which are called by my name shall humble themselves, and pray, and seek my face, and turn from their wicked ways, then will I hear from heaven, and will forgive their sin, and will heal their land," &c.

Now while we would return our humble and sincere thanks unto God for his bountiful Providence, we would conclude these lines with the following passages of Scripture: "If there be in the land famine, if there be pestilence, blasting, mildew, locust, or if there be caterpillar, &c., whatsoever plague, whatsoever sickness there be, what prayer and supplication soever be made by any man, or by all thy people, Israel, which shall know every man the plague of his own heart. Then hear thou in heaven, thy dwelling place, and forgive, and do, and give to every man according to his ways, whose heart thou knowest, that they may fear thee all the days that they live in the land which thou gavest unto our fathers, that all the people of the earth may know that the Lord is God, and that there is none else."

J. B. E.,  
Beaver Valley.

## Botany.

### WEEDS—NO. 8.

#### CREEPING SPURGE—*Das Euphorbium.*

Spurge is the common name for an extensive family of plants. The generic name is *Euphorbia*, named in honor of Euphorbus, who was physician to Juba, King of Mauritania, and the first who introduced a plant of this genus in Medicine. They are readily known by their milky white juice, and peculiar fructification, in which they differ from the milk-weed (*Asclepias*), and dogbane or Indian hemp (the *apocynum*). Some are remarkable and cultivated for their curious appearance. Out of 160 species Loudon describes 135. Dr. Gray describes 19 species. The *E. corollata* or flowering spurge, is common in rich or sandy soil and conspicuous for the showy false lobes, like 5—white petals; this is also called milk-weed, black purseley &c., grows erect 2 or 3 feet high, stem-like peduncles forked and spreading like the reeds in an umbrella. (umbelled). This like other species is considered medicinally astringent and narcotic. The juice of most species is very acid and corrosive, and will destroy warts, by rubbing the milky juice on them, the Britain species, *E. helioscopia*, or wart-weed, is often applied to eat off warts, and caution is required in tender parts. According to Linnaeus, sheep eat it, and are purged by it, and their flesh acquires a bad taste, but this is not the case with cows. Loudon adds—those however considered as obnoxious and poisonous weeds, are several species that lie close to the ground, and branch out in every direction from the root. The *E. maculata thymifolia* and also called *depressa*, is the spot-

ted spurge so common in our corn-fields, and in dry pasture fields open places every where. The other species is called *E. hypericifolia*. Large spotted spurge is very common in rich soil; the leaves have a spot and are much like those of the St. John's wort. (See Weeds No. 1. April). This acrid weed is the one charged by close observers as the weed that salivates or produces the *slobbering* with which horses are often affected in the latter part of summer; usually imputed to the St. John's wort, (*hypericum*). Be this as it may, —from facts known of the acrid quality of the juice, it demands attention. It is fortunate however that they are easily choked out by improving the soil by more valuable substitutes. Still vigilance is demanded to keep them in subjection. It is well to know by what name they are known to science, even if that knowledge will not eradicate or change the nature of the plant. It is as desirable to know the proper name and character of a weed as it is of those plants usually cultivated for use, if we desire to express ourselves intelligently. The same plant may have very different common names in different localities, which leads to confusion and perplexity. The mere fact of a plant exuding a white milky juice or breaking the stem or leaf, and calling it "milk-weed," is no guide to one who is acquainted with numerous other plants having the same property, and yet the *euphorbia* differs essentially in its character, from all the others; as much as it does from the common low sumac brush or the poison vine that climbs over fences, brushes &c. My object is not to show my own knowledge, but to impart some useful information about "weeds." J. S.

## Editorial.

### TO OUR PATRONS:

But one more number remains, to complete the first volume of the LANCASTER FARMER, and just here it seems necessary for us to say something in reference to its past, its present, and its future; but more particularly its FUTURE. In our experience during the present year, we have, on many occasions, been assured that a local Agricultural and Horticultural journal, in this county, is becoming as much of a necessity as a political, literary or religious journal; and the hope has been over and over expressed, that the present enterprise would be sustained, pecuniarily, intellectually, and practically. Local pride ought to induce every subscriber, not only to renew his own subscription for 1870, but also to send in the name of at least *one new paying subscriber*, along with it. We need a larger subscription list than we have

had the present year, because, in conformity with our original design, we propose to enlarge and improve the FARMER in many essential respects. It is true that the country is already supplied with numerous publications of a similar character, but there is not one that possesses the local significance of our journal. All its material, its thoughts, and its sympathies, are local; and it is designed to reflect the local opinions and experiences of the citizens of our great, wealthy, and thrifty county. The question then is, shall it be sustained in future to such an extent as to allow it to take rank with the progressive journalistic spirit of the age? or shall it "go down," at the end of the year, for want of the necessary support to sustain it any longer? The whole labor of conducting it, thus far, has been a labor of love, for no one connected with its publication has received any pecuniary reward; the whole income from subscriptions, and advertising, being barely sufficient to pay for ink, paper, and printing. Although those who have been so far chiefly instrumental in writing, and collecting material for its columns, are willing to continue their labors for the good of the cause, yet, it must be evident to all men, that, to some extent, "the laborer is worthy" of a more substantial "hire," and that those who devote their time to it, should receive some compensation, be it never so small.

Our next number will include a title page and index to the present volume, which will facilitate a ready reference to its passages on the part of those who may desire to have it bound: and we feel assured, from some experience in life, relating to such matters, that, no matter how little importance we may attach to the possession of our journal now, a time will come when its value will be greatly enhanced in our esteem. This valuation will be correspondingly increased, when we are assured that the present volume may be but the beginning of a long and successful continuation. We happen to know that there are some among us who possess copies of the *Pennsylvania Farm Journal*, while it was published in this county—and which never should have been discontinued or removed beyond its borders—who would not part with them for five times the amount of their original cost.

Next in importance, and in sequence of time, prior to it—in order to make our journal what it purports to be—namely, a reflector of the experiences and practical opinions of the intelligent yeo many of our county—we look for a continuance and more free outpouring of appropriate contributions to our columns, in order to meet our promises to the public for the coming year. We are aware that these literary labors of our cor-

respondents and contributors, are not likely to be pecuniarily rewarded at the present time and under present and pending circumstances, yet they may have a more substantial and permanent reward in having ministered more or less to the wants of others, for an honest, earnest effort to benefit our fellow man cannot fail to prove "bread cast upon the waters," which will "return after many days." For any deficiencies or imperfections in the mode and manner of discharging our editorial duties, we can only claim the indulgence of our patrons and contributors, assuring them that as we have endeavored to do our best, according to circumstances, in the past, we will increase our efforts to also do so in the future.

We propose to add four pages to each number of our next volume, and to increase the price of subscription from one dollar to *one dollar and twenty-five cents*, which will make it at about the same rate as our present price. In this connection we would beg leave to say, that although a few districts in the county have subscribed very liberally, yet there are others that have done very little, and in some there are no subscriptions at all. We therefore submit the following club rates, and hope that in each district of the county some enterprising and energetic individual may be found who will take it upon himself to get up a club, and forward the names to our publication office without delay. We know there is sufficient material in the county to support a local journal, and we hope this material may be brought out and made available.

A single subscriber, for one year, in advance.....	\$	1 25
For a club of 5	"	5 copies.. 6 00
" 10	"	10 " 11 75
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" 30	"	30 " 34 00
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" 45	"	45 " 46 50
" 50	"	50 " 50 00

Come, friends, THANKSGIVING-DAY and CHRISTMAS are approaching. A bountiful Providence has blessed us with health, and an usually fruitful season, and we cannot show our appreciation of His goodness in a more charitable and useful way than in giving to others as freely as He has given to us; and what more useful and appropriate Thanksgiving offering or Christmas gift can we make to our friends than a year's subscription to the LANCASTER FARMER?

**MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.**

The Society met Oct. 4th, 1869, at the usual hour in the Orphans' Court Room and the attendance of members being quite limited, owing to the swollen condition of the streams, and the

minutes being lengthy the reading of the same was dispensed with by general acquiescence. The following new members were proposed and elected, viz: Hon. Anthony E. Roberts, A. J. Sanderson, Esq., and Wm. P. Benton, of Christiana. On motion, Hon. J. P. Wickersham was elected an honorary member of the Society. A. Harris in behalf of the committee having charge of the Fruit Exhibition, submitted the report of the same, showing that the Society had netted the sum of \$16.90 in holding the said Exhibition. The members in attendance next supplied themselves with the varieties of seed wheat which had been sent to the Secretary by Thomas Harvey of the Experimental Farm School for exhibition. After the transaction of the usual current business, the Society, on motion, adjourned.

### THE PENNSYLVANIA FRUIT GROWERS SOCIETY.

Will our horticultural readers bear in mind that, by special appointment, this association will meet in the city of Lancaster, in February next? The State Fruit Growers Society is entirely distinct from, and has no connection whatever with the State Agricultural Society. It has kept up an active working organization for more than ten years, and on several occasions before, has held its meetings in this city. We would especially suggest to our readers, who may attend this meeting, that they bring with them specimens of such fruit as may be in their possession at the time, and particularly the *unnamed* varieties. They should also be prepared to submit such remarks upon culture, either verbally or in written composition, as will have a tendency to diffuse useful knowledge upon that interesting subject. "Let your light so shine that men may *know* your works." No man's lamp burns less brightly by igniting the lamp of his neighbor. If light only comes in feeble scintillations, it is better than darkness. A feeble flash, in a dark night, has often saved a man from falling into a ditch, a mire, or a rushing stream.

### AGRICULTURAL EXHIBITIONS.

In our last number we made some editorial remarks in reference to the Horticultural exhibitions held in this county the present year, in the Court House at Lancaster city, and in the Town Hall at Marietta. Since the issue of that number another similar exhibition has taken place, on the grounds of the "Lancaster County Agricultural Park Association," which, we feel we would not be a faithful chronicler of the events of this character, transpiring around us, if we did not notice; should we do nothing more than to

make a record of it, as a matter of local history. This association must be regarded as *one* of the local institutions of our county, and if money, enterprise and influence can add to its tangibility and perpetuity, a *living* institution. Contrary to the expectations of many, its first annual exhibition, under all the unfavorable circumstances attending its opening, was a creditable demonstration; and in all respects, except magnitude, far superior to the State Exhibition held at Harrisburg. There is, perhaps, no similar establishment in the State of Pennsylvania, or out of it, in this country, that is so complete, and so neat, and so substantial in all its appointments as this park. The display and the accommodations alluded to, as an initiatory effort, were grand, and reflect great credit upon the enterprising citizens who have the matter in hand. Without expressing any personal opinion upon the quality or the policy of it, we are nevertheless compelled to say there is a feature connected with the park that is entirely disapproved by a number of the most intelligent and influential agriculturists and horticulturists of our county, and that feature is the prominence given to "trials of horse-speed." We confess ourselves entirely too unsophisticated to understand, from personal knowledge, any of the inside operations of the "sporting ring," if such a ring exists; but we may be allowed to suppose that these trials of speed *may* be conducted as fairly and as harmlessly as trials of base-ball, of cricket matches, and of college boat-clubs. We are no apologists for that which is unqualifiedly wrong, and while, on the one hand, we would "nothing extenuate," neither on the other hand, would we "ought set down in malice." We have indulged the hope, and we indulge it still, that a time may come in our agricultural and horticultural history, when the whole energy, and the material and intellectual means, of the great county of Lancaster, will be concentrated in one grand and living association, with the LANCASTER FARMER as its acknowledged organ; and that, too, without compromising any material interest, or moral principle. Whether our hopes, in this respect, will ever be realized, is a matter which can only be determined by the progressions and mutations of *time*, and to that tribunal, we are willing to commit the subject, whatever the consequences may be.

### POULTRY MANURE.

This is the most valuable of the farm manures, and is entitled to great care in its collection and use. Beyond the amount of water it contains, it is as valuable as guano, and, therefore, should never be sold by practical farmers to morocco

dressers, as is generally the case. The poultry house should be underlaid with charcoal dust when it can be procured, so as to receive the hen manure as fast as made. The surface of this charcoal dust should occasionally be raked all around off to one corner with a portion of the dung. This way be continued until the manure is required for use, when it should be thoroughly mixed with ten times its bulk of soil before being applied to crops. When charcoal dust cannot be procured, well decomposed swamp-muck, plaster-of-paris, or even aluminous clay may be frequently dusted over the floor of the poultry house to be mixed with this manure. The object of all this is to receive and retain the ammonia, so as to prevent its liberation from injuring the health of inmates of the poultry house. All animals, man included, suffer from breathing the effects arising from their excreta, and this is particularly true of the feathered tribes. Their natural habits in the wild state cause them to pass through the upper strata of the atmosphere, and with such velocity, and to readily rid themselves of the noxious gases given off the surface of their bodies, and to be entirely beyond the deleterious influence from the fumes of their excreta. We should, therefore, in the poultry-house make such arrangements as will prevent the poultry from inhaling their deleterious gases.

## Miscellaneous.

### "TOO MANY IRONS IN THE FIRE."

#### ADVICE TO WORKING MEN.

This saying was evidently born in a blacksmith shop. It has done service in every kind of shop, and has passed into one of those proverbs which are as often false as true. Indeed, this is the character of the greatest number of proverbs. True in a limited and special range, they are used as of universal application. Now, though a man may have "too many irons in the fire," it is just as true that he may not have enough irons in the fire. It is foolish to take on more work than one can do well. It is wicked to work so excessively as to exhaust the strength, weaken digestion, impair sleep, and shatter the nervous system. When these results are produced by an inordinate use of the passions, they are called dissipations. But they are none the less dissipations when they spring from an inordinate addiction to business. But it is not in this direction that men are said to have too many irons in the fire. When a man is carrying on so many separate enterprises that he must neglect some of them wholly, and can attend

to none of them thoroughly, he is properly said to have too many irons in the fire. But the same phrase is applied to a man who turns his mind to many different kinds of trade. It is the serious belief of many that a man cannot be a good workman in more than one art; that, if a workman means to be skillful, he must devote his life to a single trade, and in confirmation of such notions proverbs fly thick—"Jack of all trades and master at none," being a specimen!

In olden times, when men had little education, and were slow and dull, it may have been true that a man could master but one trade. But with the growth of intelligence among laboring men, their brains are nimbler, their hands are quicker, and they can pursue a more diversified industry.

At any rate, the working men of America have kicked this proverb out of their shops. It has been the pride, and the thrift, too, of free labor in America, that it could do anything. The farmer does not confine his labor to one or two crops. Whatever will pay well in the market he soon learns to raise, and is the better for learning. A real Yankee may learn the carpenter's trade. Having a taste for fine work, he teaches himself cabinet-making. Or if occasion serves, he carves or builds models for machinery. Time being slack, he comes down to the coast, hires out in a ship yard, and, after a little, is a very good ship carpenter. No one after that would be surprised to find him in a wheelwright's shop, and at last he settles down as a carriage-maker.

Is there anything in these different trades so difficult as to require for success in them the whole of a man's life and his undivided mind? They are all of a family. The knowledge which a man gets in one is applicable to them all. Nay, they help each other. In the shipyard a man gets ideas of strength and solidity that would make him a better house-builder. In cabinet-making he will attain an accuracy and fineness of work which will improve his hand all the way down through coarser trades. His mind will be improved. He will not be likely to get into "ruts." He will be apt to carry the habit of thinking into all his business. It is said that farmers want to buy all the lands that bound their farm. A working man should be curious to understand every trade that touches his trade. A man of a single trade is like a knife with a single blade. Every blade in addition makes it a better knife, up to the point when it becomes too bulky for convenient use. And this figure very well illustrates the benefit of being able to pursue several different avocations. If the blade of a one-handed knife breaks, there is the end of it; but if it has two blades, it is serviceable yet. A big blade for



coarse work, a fine blade for fine work, a sharp-pointed blade, an awl, a lancet, in short, blades that are tools for half-a-dozen different uses, make the knife all the more valuable. A one-bladed man is not to be despised. But he is, after all, but a kind of jack-knife man. Commend me to the man who carries a whole handleful of blades!

So far from exhorting a young mechanic to stick to one thing, I should urge him to be master of his trade as soon as possible and then be curious of all trades that are nearly related to it.

A carpenter ought to be a good roofer, whether in pine shingles, in slate, in tin, in felt, or in paper and gravel. A village blacksmith ought not to be content with shoeing horses, mending plows, setting tires, etc., he should become a manufacturing blacksmith; competent, if other work gives out or a profitable demand exists, to fashion the hundreds of articles which pass under the name of house-furnishing goods. Of course he will do the most of that which pays the best; but variety will make his work pleasanter, will prevent his income from being greatly affected by periodic disturbances in the market, and will always give him one blade with a cutting edge.

As we rise from inferior to superior trades, and, still more, to professions, the more striking does this truth become. An inferior trade is one in which hand-work is largely in excess of head-work, and a superior trade is one in which the head-work predominates. And whenever, in any calling, the chief part of the business is thinking, it then has become a profession.

No man is capable of carrying on a profession or superior trade who is not able to organize many distinct branches into one. Work grows complex as it rises upon the scale of value. A man who can do but one thing, or who understands but one industry, will always be a subordinate. It is this power to comprehend variety and to organize them to unity that makes a master-workman. Each superior trade results from the combination of several subordinate trades. Each material which goes into the working of a given industry comes from some subordinate trade. A contractor brings together in the building of a single house the products of half a hundred separate shops. He should possess a general knowledge of the quality and working properties of every one of these elements. Here is a place in which, if he is not Jack at all trades, he will be good in none, or rather, he will not be good in that one trade which unites all the rest!

We are not unconscious that there are many trades which require peculiar training and fineness incompatible with much meddling with others; that there are some products that are jeal-

ous, and refuse to yield their best forms to anything but an almost exclusive addiction to themselves; that at a certain stage of manufacturing there comes in an element of fine art—the finishing stage. At this point, delicacy and perfectness can be had only by steady and long practice. But the general truth remains, that in the common industries of life a workman who makes himself acquainted with many allied branches of trade is apt to be better educated, more intelligent, more prosperous, better armed against revulsions and depressions of business, and more likely to rise from a subordinate to an independent condition. In short; a man of few ideas and narrow skill will always live on wages. The man of enterprise and various skill will soon be able to live on his capital. Some sturdy old Englishman, we forget who, derided the maxim. “Too many irons in the fire,” saying, “you can’t have too many! put them all in—shovel, tongs and poker!”—*Henry Ward Beecher, in the Manufacturer and Builder.*

#### MUSHROOMS.

Few persons in this country are aware of the number of species of fungus, or mushrooms, that are capable of being made useful as food, or for sauces, and of the excellent qualities that many of them present. One or two species, gathered with much apprehension, and frowned upon by most persons, exhaust the stock of availables in this direction, while our more fortunate or more learned foreign brethren have at their command varieties that serve to replace nearly every kind of food, or at least aid in giving them a piquant flavor. A gentleman, however, residing in North Carolina, has been for some time preparing an illustrated work upon the mushroom, in which, by means of figures and general descriptions, he expects to be able to point out readily what species may be eaten and what must be avoided, so as to render it entirely practicable with such a guide to make a suitable selection from those that present themselves to notice in our daily walks. The total number of species that are not merely eatable, but actually desirable as articles of food, amounts, we believe, to as many as sixty; and it is said that the proportions of the poisonous kinds to those that are wholesome, is not greater than exists between the wild fruits and berries that are ordinarily met with.

Whereas we have had something to say, on various occasions, in the pages of this journal, on the subject of this luscious edible, and as there is a bare possibility that Mr. Mushroom may be the “coming man,” in the catalogue of cultivated vegetables, we do not hesitate to publish the



above extract from a cotemporary journal for what it is worth, particularly as we are writing for posterity as well as for the present generation. The book referred to in the extract, when it appears, will no doubt be a valuable acquisition to our agricultural and horticultural literature, and will be looked for with interest, by our leading cultivators, as something which they have long desired to see. In the meantime, as a partial reply to our readers, who have made a trial of cultivating this singular plant, and have signally failed, and have made anxious inquiries in regard to its culture, we publish for their edification an article on the subject, which we find in *Appleton's Journal of Literature, Science and Art*, for October, 1869, and our regret is, that we cannot publish with it, the very satisfactory illustration, which accompanies the article. There are, doubtless, within the county of Lancaster, exhausted stone quarries, excavations, or cavernous localities, which, with a little artificial aid, might be made available for this purpose, on the principles detailed in the article below. "Mushroom-growing, as it is carried on in some parts of France, is one of the most extraordinary examples of culture in the world. In the vicinity of Paris are extensive stone quarries, long since abandoned, from which the stone has been extracted as coal is obtained, leaving extensive caves, sixty and seventy feet under ground, and extending great distances, in some instances fairly under the city itself. In these caves the temperature is very equal and the atmosphere moist; and here mushroom-growing has been brought to its fullest development. The floor of the cave is carefully swept, and the beds are then made of the dust of the stone-cutting yards above, mixed with stable manure. The beds are about 22 inches in height and the same in width, ranged in parallel rows, between which, there is just room enough to walk. The temperature of the bed is carefully noted, during the fermentation of the manure, and the spawn of the mushroom is not sown until it is below 70 degrees Fahr; since, if it is above this, the layers of spawn are liable to be burnt. The spawn when sown is covered with manure, which is removed as soon as vegetation begins, and is replaced by earth. The details of making the beds, watering them, picking the crop, and renewing the spawn, vary in different localities, but the general system is everywhere the same. The mushroom caves of Montrouge, just outside of the fortifications of Paris, on the southern side, are reached by descending well-like pits, by means of a ladder, which is simply a single pole with sticks run through it to serve as steps. From the bottom of the pit, little passages radi-

ate. They are sometimes narrow and often very low, but every inch of available room is made use of, and as many beds are crowded together as possible. Everything is kept scrupulously neat, and no litter is left strewn on the floor, as one would naturally expect. Another type of mushroom cave is to be found at Frepillon, Mery-Suroise, where are the quarries for the building-stone and plaster so largely used in Paris. The excavations here are not in small, narrow passages, as in those previously described, but form large, vaulted apartments, one of which is represented in our engraving. The beds are arranged in rows, in such a manner as to make the most of the space, and here, as elsewhere, the practice of planting a certain number of beds every day in the year is observed, so that the supply is un-failing. An idea of the magnitude of the mushroom business may be formed, when it is known that one proprietor has twenty-one miles of beds, another sixteen, another seven, and so on, through a long list. Among the numerous localities in which mushroom culture is carried on, besides the two mentioned, the principle are "Moulin de la Roche," Sous Bicetre, near St. Germain, and at Bagneux. These caves, like mines, are under government supervision, and vary in depth from twenty to one hundred and fifty or sixty feet. Coal mines are not adapted for growing mushrooms, and the smallest particle of iron in the beds of manure is avoided by the spawn; a circle around it remains inert. It is said to be the same with coal."

Two or three things may be learned in this article, and these are that a uniform moist atmosphere is required, and that no coal or iron should be mixed up with the soil. Deep, exhausted stone quarries might be so arched over or covered as to make them suitable for mushroom culture, and, no doubt, in the end, would pay.

#### ABOUT CANDLES.

The first step towards the invention of candles was taken in the twelfth century, when tallow torches came into use. A hundred years later, the tallow candle, pretty much as it exists now, made its first appearance, and was deemed so great a luxury that only people of real wealth could afford to buy it. The haughty barons, who forced King John to sign Magna Charta, would, probably, have considered a parcel of tallow dips as a most welcome present at Christmas time; and to have stolen one of those precious luminaries, or only the end of one, from a kitchen dresser, would have been to incur the noose without any hope of pardon. It was not until

the fifteenth century that burgesses and tradespeople were enabled to purchase candles. The prices had become somewhat lower by that time. The cost of one candle (they were sold singly until the present century) was about six pence modern money; and for this sum one had the wherewithal to escape darkness for half an hour. For it must be remembered that the primitive dips differed from those now in use in two points; firstly, in the fact that the tallow was not refined, and secondly, in that the wicks continued, in most instances, to be flax. Cotton was more expensive than silk in those days. A pair of cotton stockings cost sixty shillings. And, under the circumstances, it would have seemed an extravagant folly to burn cotton wicks elsewhere than in palaces. On the other hand, the flaxen wicks acted very ill; there was always a great deal of trouble in lighting them, and when once the feat had been accomplished, they burned at such a terrific rate that they melted half the tallow without consuming it. This last fact gave rise to a quaint form of economy. Instead of casting the dripping of the tallow candle into the fire, as now-a-days is done, every scrap was saved, and when two or three pounds had been collected the Chandler bought them back at so liberal a rate that the drippings of four candles afforded the price of a new one.

Some half century or more after the invention of tallow candles, wax lights were introduced into a few palatial residences. Wax tapers had been in use in churches in the ninth century, but their cost had been so far beyond the limits of ordinary purses, that no one would have dreamed of wasting his money on such an expensive article. The offering of a wax taper to a chapel or a shrine was looked upon throughout the middle ages as a princely gift. A man who presented a taper weighing a pound to his parish priest was certain of receiving absolution; and, as every one knows, it was customary to vow a taper to the Virgin Mary, in the same way as the ancients vowed a hundred doves to Venus, or a white heifer to Juno. As a first attempt to pacify Thomas A'Becket, Henry the Second sent two wax tapers weighing twenty pounds each to the cathedral at Canterbury, and this munificence cost him four hundred crowns of gold. When Richard the First returned from France after his release from captivity, he bestowed the first five hundred crowns he could obtain in buying tapers for the church at Fontevault; and Louis the Eleventh during his reign of one and twenty years, spent a perfect fortune in candles for "Our Lady of Grace." Now-a-days the practice of burning tapers as peace offerings, or sin offerings,

still prevails in the Roman Catholic Church. Two years ago, on the occasion of the Prince Imperial's illness, the Empress Eugenie went in person to offer a taper at the Virgin's shrine of Notre Dame. But the existing custom must be looked upon as merely a pale reminiscence of what it was in former times. The fall in the price of wax has entailed a diminution in the value of the sacrifice. The gift of a taper can no longer procure absolution—*All The Year Round.*

### THE HYDRAULIC RAM.

The hydraulic ram is a simple mechanical apparatus, constructed upon philosophical principles and is used very effectively in raising a portion of the water from a spring or running fountain above the level of its fountain-head. The following description, it is believed, will be easily understood: Suppose a metal-pipe is laid down the course of a stream through which the water is required to pass. The lower end of the pipe is closed, and near the extremity is an orifice on the upper side which is opened and closed on the inside by a puppet valve<sup>s</sup> shaped something like an inverted barrel bung. There is also another similar orifice and valve opening outward from the main pipe like an air vessel. Now let both valves be closed. As then there is no means of escape for the water leading from the spring it is brought to a state of rest. The valve opening inward is loaded so that its gravity is greater than the pressure of the water at rest in the pipe; it consequently falls into the pipe, leaving the orifice open, through which the water immediately begins to rush with increasing velocity, until its momentum becomes such as to push up the valve to its place in the orifice. The momentum of the water suddenly stopped in its course is such as to lift up the other valve opening outward into the air vessel, through which the water rushes, compressing the air into a smaller compass, until the reaction of the air is in equilibrium with the action of the water, when the valve No. 2 falls back to its place and prevents the water in the air-vessel going back again into the main pipe. The water in the main pipe thus having no escape, is brought again to rest, whereupon valve No. 1 falls down again by its own weight and the process is again repeated. From the air vessel a discharging vessel leads off to the upper story of a house, or any other place where the water is wanted, to which point it is driven by the elasticity of the compressed air in the vessel. Of course the amount of water raised, compared to the whole, will be in inverse ratio to the elevation of the discharging point above the fountain-head. The momentum of the

blow forcing the water into the air vessel when the valve closes was well illustrated at the time the fountain was put in action on Boston Common, where it will be recollected, the momentum of the water was so great, at the sudden stoppage of the jet, as to burst the pipe and deluge the Common.—*Boston Journal.*

**RECEIPTS FOR PRESERVING FRUITS AND VEGETABLES.**

The following suggestions for canning and preserving fruits and vegetables have been carefully tested by experience, and approved as simple and reliable. If the fruit be fresh and healthy when put up, they may safely be relied on to keep in their natural condition for a long time, and almost as fresh as when first gathered. An important part of the success in canning and preserving fruit consists in selecting that which is fresh, sound, and healthy. This done, secure good tin cans, or if you can get them, glass jars and bottles, and when filled, be sure that the air is entirely expelled, and that they are perfectly sealed or soldered. Glass jars are to be preferred, at all times, to tin cans. Be careful to preserve the fruit as nearly whole and unbroken in the process as possible. Fruit and vegetables will always keep better if fresh and unbroken than if bruised.

The rules for preserving fruits are simple and few, and can be successfully observed by any one. There need be no failure if reasonable care and attention are exercised. There are two ways of expelling the air from jars or cans, either of which will answer. The first is to heat the fruit after putting it into the cans or jars, and the other to pour the hot fruit into them, which itself will expel the air. The first method is usually preferred. It preserves the form and beauty of the fruit, which is likely to become bruised and broken by pouring it, hot, into the jars. Great care should be taken in canning cherries, berries, currants, and all small fruits, to do so without breaking or bruising them. When broken the juice escapes and presents a clear syrup. Too much cooking has the same effect.

To prevent breakage, when glass jars or bottles are used, they should be immersed in warm water before pouring in hot fruit; or wetting a towel in cold water and folding it around the jar, before pouring in the hot fruit, will answer the same purpose.

All fruit and vegetables should be packed in as closely as they will permit. In heating the jars pieces of wood should be laid in the bottom of the boiler to keep them off the hot surface, and as soon as the fruit is sufficiently heated or cooked they should be sealed or soldered, and set away.

Before setting them away be sure that they are perfectly air-tight. The least air will spoil the fruit.

A good general rule, in canning fruit, is to use one pound of sugar with four pounds of fruit, and enough water to keep it from burning. Tin cans should be soldered, or sealed with sealing wax, or cement made of equal parts of rosin, beeswax, and tallow. Sealing wax is best for such cans as have grooved rims.

	Time for Boiling Fruits.	Quantity of Sugar to Quart.
Cherries,	5 min	6 ounces.
Raspberries,	6 "	4 "
Blackberries,	6 "	6 "
Strawberries,	8 "	8 "
Plums,	10 "	8 "
Whortleberries,	5 "	4 "
Pie Plant, <i>sliced</i> ,	10 "	10 "
Small Sour Pears, <i>whole</i> ,	30 "	8 "
Bartlett Pears, <i>in halves</i> ,	20 "	6 "
Peaches,	8 "	4 "
Peaches, <i>whole</i> ,	15 "	4 "
Pine Apple, <i>sliced</i> ,	15 "	6 "
Siberian, or Crab Apple,	25 "	8 "
Sour Apples, <i>quartered</i> ,	10 "	5 "
Ripe Currants,	6 "	8 "
Wild Grapes,	10 "	8 "
Tomatoes,	20 "	0 "
Gooseberries,	8 "	8 "
Quince, <i>sliced</i> ,	15 "	10 "

**TO PRESERVE STRAWBERRIES, RASPBERRIES, BLACKBERRIES, GOOSEBERRIES, CHERRIES, AND CURRANTS.**—Strawberries being very juicy require but little water. Fill the jars as full as possible without crushing the fruit, place in a boiler of cold water—let the water heat, not boil—when reduced one third of their bulk, remove from the boiler, empty every third jar into the other two, replace in the boiler, boil three or four minutes, and fill with hot syrup, using only sufficient water to dissolve the sugar, let the steam escape, and seal as directed for other fruits.

Or use three quarters of a pound of sugar to one pound of fruit; sugar the berries, and let them stand ten minutes, put in a preserving kettle, and let them boil three or four minutes. Prepare the jars as directed, and seal quickly while the contents are hot.

**APPLES.**—Take well flavored apples; pare, quarter, and boil till tender, but not to break in pieces. Add sugar to the taste, and let the whole boil up once or twice. Fill the jars, and seal.

*Another Recipe.*—Halve and core ripe and tender apples, fill the jar, pour in the syrup till the jar is half full, place in a boiler of cold water, boil ten minutes—if there is a vacuum, fill the jar or can with hot syrup—after standing a short time to settle, seal as before directed.

**PEACHES.**—Secure fine ripe peaches; pare them,

part them in halves, and take out the stones; put them in water as soon as pared, to retain the color; fill the jars with peaches, packed as closely as possible; add syrup till the can or jar is half full. Place in a vessel of cold water, and boil, (see recipe for time,) and seal according to general directions.

*Another Recipe.*—After preparing the peaches as above, fill the jars first with peaches, then with pure water; boil ten minutes, and seal up hot. When wanted for use, pour off the water; put the peaches in a dish and sprinkle with sugar an hour before wanted, same as for fresh peaches.

**QUINCES.**—This fruit should be sliced and boiled in water till tender, then fill the jars or cans, add the hot syrup, and seal as directed.

**PEARS.**—Pears, like peaches and quinces, should be put in cold water immediately after paring, to preserve the color. Let them boil till tender. Fill the jars, and fill with hot syrup; seal immediately.

*Another.*—Take good preserving pears; pare and quarter them. Boil in a small quantity of water till tender. Take about one fourth the quantity of quinces, and prepare in the same way, then put both together, with as much sugar as will sweeten to the taste, into a preserving kettle, and let them boil three or four minutes. While hot pour into the jars; reference should be made to the time table.

**PLUMS.**—Make a syrup, using half a pound of sugar to a pound of fruit. Take off the skins; boil the plums in this syrup ten minutes, or until the fruit is tender, fill the jars and seal hot.

Plums may also be cooked in the jars, and by many is preferred. Fill the jars with plums, and half full of syrup, and place in a boiler of cold water, boil ten minutes, and seal.

**TOMATOES.**—Scald and remove the skins, place in the jars or cans, reduce and treat as directed for strawberries. Boil from ten to fifteen minutes, fill up and seal.

*Another.*—Take off the skins, put in a preserving kettle or other convenient vessel without salt, and boil a quarter of an hour, fill the jars and seal hot.

*To Can Whole.*—Scald and remove the skin; place in the jars until full. Boil twenty minutes, and at the same time boil some tomatoes in a dish or pan; when ready to seal, fill up the jars or cans with tomatoes and juice from this dish, and seal boiling hot. Tomatoes should be cooked and canned in nothing but their own juice.

*Preserving Vegetables.*—To preserve vegetables it is absolutely important to take nothing but that

which is fresh from the vine or stalk. If at all withered or decayed, success is impossible.

**CORN.**—Cut from the cob, put the corn in the jars or cans with the milk of the corn. Very young and tender corn has been preserved by boiling one hour. But corn generally should be boiled four hours.

*Another.*—Cook the corn on the cob, as much as when it is prepared for eating, then cut it off and press it tightly into the jars; boil one hour, seal and set away in a dry, cool, dark place. Jars or cans should be temporarily shut while boiling.

It requires a much longer time to expel all the air from vegetables, than from fruit. This fact not being understood, has caused much failure in attempts to preserve them.

#### ARTS FOR HOME USE.

The immediate application of modern discoveries in science and art to the practical matters of life, and especially to domestic economies, is a prominent characteristic of our times. Some of our readers would be surprised to hear what a number of periodicals in this country and Europe are devoted to this purpose. From nearly all of these—published in all modern European languages—the readers of the Ledger are from time to time kept informed of the progress made in the direction indicated; sometimes in brief paragraphs, sometimes in more formal articles. In what follows we have grouped together a few such matters on practical and home subjects, that will repay those who cut them out for preservation. We begin with a very homely article:!

A substance called "Starch Lustre" is used for washing purposes, which, when added to starch, causes the linen to which it is applied to assume not only a high polish but a dazzling whiteness. A portion of the size of an old-fashioned cent added to half a pound of starch, and boiled with it for two or three minutes, will produce the best results. This substance is nothing more than stearine, colored by a slight addition of ultramarine blue, the essential ingredient being the stearine; and with or without the coloring matter, will be found to add much to the beauty of linen articles to which it is applied. Stearine is to be had at any good drug store.

For the preservation of the lustre of articles of silver or plated ware, when not needed for actual use for a considerable time, a coating of collodion (to be had at the drug stores), may be employed to great advantage. The articles are to be heated, and the collodion then carefully applied by means of a brush, so as to cover the surface thoroughly and uniformly. It is used most conveniently when diluted with alcohol; as for pho-



tographic purposes. Articles thus prepared exhibit no trace whatever of their covering, and have stood for more than a year in shop windows, and in dwellings, retaining their white lustre and color, while other pieces not thus prepared become seriously tarnished.

A material for fastening knives or forks into their handles when they have become loosened by use, is a much needed article. The best cement for this purpose consists of one pound of colophony (purchasable at the druggists'), and eight ounces of sulphur, which are to be melted together, and either kept in bars or reduced to powder. One part of the powder is to be mixed with half a part of iron filings, fine sand or brick dust, and the cavity of the handle is then to be filled with this mixture. The stem of the knife or fork is then to be heated and inserted into the cavity; and when cold, it will be found fixed in its place with great tenacity.

Straw hats which have turned yellow may be bleached by the use of a soap prepared by taking any good soda soap and precipitating it from its solution by means of common salt, and adding to it one-fourth the weight of sulphate of soda, previously rubbed into a mass with water, then drying the product. About equal parts, by weight, of water are to be poured upon this, and for every two pounds of soap, half an ounce of spirits of sal-ammoniac is to be added; and after the whole has assumed a gelatinous consistency, one part of the mass is to be dissolved in eight parts of warm water; smaller proportions of the foregoing will, of course, answer for a few articles. The objects to be bleached are to be washed by means of a brush in this solution, and transferred, while still moist, into water acidulated with hydrochloric acid, (twenty-five parts water to one-and-a-half of acid), and allowed to remain a few hours in this liquid. They are then to be washed with fresh cold water and dried. Experiment has proved the results of this method of bleaching to be exceedingly satisfactory.

An excellent water-proof varnish, without alcohol, for various articles, is prepared by taking three parts, by weight, of pale shellac, one part of spirits of sal-ammoniac, and six or eight of water, and shaking them together in a bottle, and to be then corked up for twelve hours. This is then placed in an earthen vessel over a fire, and boiled, with constant stirring, till the shellac is dissolved. This solution replaces to great advantage the alcoholic solutions of shellac; and when mixed with about twelve parts of water, with the addition of *terra de sienna* or ochre, can be used in the preparation of oil cloths. After a little exposure to the air the ammonia evaporates,

and leaves a layer entirely impervious and unaltered by water. The same solution may also be used in various combinations for staining wood of a brown color, and rendering it at the same time water-proof. The applications in this direction will suggest themselves readily to our readers. It is an interesting fact, in connection with the substance, that it readily dissolves certain aniline colors, as green, yellow, blue, etc.; and it can thereby be employed for the purpose of imparting a brilliant and permanent water-proof color, and of imitating many articles. In decorative painting it replaces to great advantage the various glues and sizings usually employed, and which are so readily acted upon by atmospheric and other agencies.—*Public Ledger*.

### HOW MUCH?

How much better is your farm than it was one year ago? How much lovelier have you made your home by the planting of trees and shrubs? How much better is your stock of horses, sheep, and cattle? How much of error have you discovered in your mode of treatment of the different crops you have grown? How much have you learned from your neighbors, from your agricultural paper, from your experience in relation to your farm operations? How much have you done to aid your wife and daughter in their household duties by furnishing them with improved household utensils, and the better location and arrangement of wells, cisterns, walks, wood piles, cellars and dairy rooms? How much of kindness and charity have you shown towards the needy and the helpless? How much better husband, father and brother are you than you were one year ago? Now is the time to reflect upon all these things.

RAISING CELERY.—The successful raising of celery is one of the most difficult things to achieve in garden culture. It requires nearly as much attention as hot-house grapes. The failure in raising this vegetable, which is the rule, is mainly from neglect of certain conditions. These are—1. Trenches should be dug from eight to ten inches in depth, in rich soil. 2. The trenches should be half filled with well-rotted manure, mixed with the soil, in which the plants should be set well down. 3. There should be only a single row of plants, instead of two or more, as is commonly the case. 4. The plants should be set out from ten days to two weeks earlier than is customary; that is to say, for the first crop the last week in June, and the rest, or the bulk of the crop, in the two first weeks in July. Boards should be placed over the rows to protect the plants against the scorchings of the sun, from ten

to four o'clock, until they have taken a firm grasp of the earth and commence growing. They should be watered for some time, in the absence of rain, twice a day, afterwards once a day. After growing about eight inches, the earth should be carefully drawn to the rows, and continued gradually as the growth progresses. Manure-water is excellent, and should be applied at least twice a week until the middle of October. Guano-water is the best. In drawing the earth to the plants, care must be taken not to cover the leaders and stunt the growth. Use the hand altogether in distributing the soil about the plants and releasing the leaves when covered. Celery can be produced four feet in length from the root to the top of the leaves, by good management, and we have so grown it more than once upon our own premises.

**AMERICAN SUMAC.**—We have, on several occasions, urged our people to attend a little to the mine of wealth about them in the shape of native sumac, instead of importing at the present prevailing prices. We are glad to see that something is now being done.

Mr. A. S. McRae, oil and produce broker, Liverpool, writes to the *New York Journal of Commerce*, that he received a lot of American sumac from Philadelphia, a sample of which was analyzed for him by Hudson and Arrott, chemists of Liverpool, with the following result :

Tannin .....	20.80	} 100
Sand .....	75	
Vegetable matter .....	78.45	

On this result Mr. McRae says: "The average of tannin in the best Sicily sumacs, is 16 per cent. (authority Prof. Muspratt.) Our first commercial analysts have seen it as high as 26 per cent (and this only one sample within the last twelve months), and American (Philadelphia) is producing at 20 per cent. Now for value: The lowest sumacs of any kind yield 7 per cent. tannin, and sell at £8 10s. per ton—this is French. The Sicily Sumac, giving 16 to 26 per cent., sells at £13 to £24 per ton. American, therefore, with 20 per cent. tannin, should command (and will, in time) £16 per ton!"

The sumac sent from Philadelphia was the *Rhus glabra*, which abounds on dry hills from Canada to Florida, and may be had for the gathering. There is no doubt but a fine business may be done with it.—*Gardener's Monthly*.

**A REMEDY AGAINST INSECTS.**—We found it next to impossible, last year, says the *Germantown Telegraph*, to protect the young canteloupe vines against the persistent attacks of the black gnat

and the striped bug. Even young radishes, which we had always found before a sure protection, had little or no effect. Eventually soap-suds were applied, which seemed to do the business, both in driving them away, and in keeping them away. They should be applied several times, and always after a rain has washed off the effects of the previous sprinkling. Whale-oil soap is the best for this purpose, using about one pound to four gallons of water. This soap can be obtained at the agricultural stores, generally, as well as at some of the drug and grocery stores.

**TO GROW HORSE HAIR.**—Oftentimes the owner of a valuable horse discovers a spavin or curb making its appearance; a blister is applied, and many times the hair comes off, which as a natural consequence the owner wishes to have grow out as soon as possible. Now, I herewith send a recipe which will cause the hair to start right away on bare spots caused by blistering, harness-gall, or otherwise. Take an old boot or shoe, place it on the fire, burn to a coal, pulverize and mix with hog's lard to a very thin paste. A few applications of this paste to the places will do the work.

## REVIEW OF MARKETS.

### PHILADELPHIA GRAIN MARKET.

THURSDAY EVENING, October 21.

**Flour.**—There is very little demand either for export or home use, and the market continues dull; about 1200 barrels changed hands, including superfine at \$5 50¢6 75 ¢ bbl; extra at \$6 25; northwest extra family at \$6 37½¢7; Pennsylvania do do at \$6 25¢6 75; Ohio and Indiana do do at \$6 50¢7; and fancy brands at \$7 50¢9, according to quality. Rye Flour sells at \$6 ¢ bbl.

**Grain.**—Wheat, as we have noticed for several days past, continues very dull, but prices are without material change; sales of 6000 bushels western and Pennsylvania red at \$1 37¢ 1 40; and 500 bushels Ohio and Delaware do at \$1 40. Rye is selling at \$1 05¢1 10 ¢ bushel for Western. Corn is dull at the decline noted yesterday; sales of 1000 bushels western yellow at \$1 03, and 7000 bushels western mixed at 94a98c, the latter rate for high mixed. Oats are firm but quiet. Sales of 5500 bushels western and Pennsylvania at 55a60c. Barley is dull and unsettled; sales of 3000 bushels two-rowed New York at \$1 15a1 25, and 5000 bushels four-rowed at \$1 40. The receipts to-day are as follows: 1955 bbls flour, 14,800 bushels wheat, 8235 bushels corn and 7424 bushels oats.

**Provisions.**—The market continues quiet, but prices are unchanged. Sales of mess Pork at \$31a32 50 ¢ bbl. Bacon Hams at 19½¢a21½¢; pickled Hams at 18a18½¢; salt Shoulders sold at 15½¢ ¢ lb, and smoked Shoulders at 16½¢a17¢, and Lard at 18¢ ¢ lb.

**Seeds.**—Cloverseed is dull; 200 bushels sold at \$6 50a6 ¢ bushel. Timothy is dull; 150 bushels sold in lots at \$3 50. Flaxseed sells on arrival at \$2 55.

### HOUSEHOLD MARKET.

LANCASTER, Oct. 27.

Butter sold at 45a48, and some at 40c; Eggs, 30a32c. ¢ doz.; Lard, 20a22c.; live Chickens, 50c.a\$1 ¢ pair; dressed Chickens 40a50c. each; Sausages, 20a22c. ¢ lb.; Beef by the quarter, 10a11c. for front, and 12a13c. ¢ lb. for hind quarter. Potatoes, 50a65c. ¢ bus, according to quality, and 8a10c. ¢ lb. peck; Turnips, 8a10c. ¢ lb. peck; Onions, 20c.; Apples, 12a 18c. ¢ lb. peck; Cider, 90c. ¢ gallon at retail, and \$6a5 50 ¢ bbl. without the vessel; Chestnuts, 15a20c. ¢ quart; Buckwheat flour, \$1.25 ¢ quarter of 25 lbs.; Corn, 90c.a\$1 ¢ bus., Oats, \$1.30a2 ¢ bag of 3 bus., according to quality.



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Average per centage of realized cash assets to total assets of the New York Life Insurance Companies, December 31, 1868.....		.6334
<b>Per centage of the World Mutual.....</b>	<b>.7454</b>	
Average of losses paid to total income of the New York Life Insurance Companies.....		14.58
<b>Per centage of the World Mutual.....</b>	<b>11.08</b>	
Average of losses to amount insured of the New York Life Insurance Companies.....		.82
<b>Per centage of the World Mutual.....</b>	<b>.49</b>	
Average of realized cash assets on hand for each dollar of insurance liabilities (25 companies) excepting Companies commencing business in 1868.....		.8240
<b>Per centage of the World Mutual.....</b>	<b>1.3550</b>	

## LANCASTER REFERENCES:

JACOB BAUSMAN, President Farmers' National Bank.

Maj. JAS. F. RICKSECKER, City Treasurer.

CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank.

N. ELLMAKER, Esq., Attorney.

Messrs. BAIR & SHENK, Bankers.

B. F. BAER, Esq., Attorney.

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HARVEST OF 1869.

**"THE VALLEY CHIEF"**

## A COMBINED SELF-RAKING REAPER AND MOWER

After our success in the Harvest of 1868, in pleasing our customers with a neat, light, durable, and a complete Combined Harvester, we again come into the market for the Harvest of 1869 with our VALLEY CHIEF feeling a great confidence in its superiority.

We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine is built with an eye to convenience, simplicity and durability. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower with a first-class Self-Raking Reaper, thus giving our customers a simple, strong and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

**MARSH, GRIER & CO.**

LANCASTER, June 25th, 1868.  
**EDITORS EXPRESS** Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business.  
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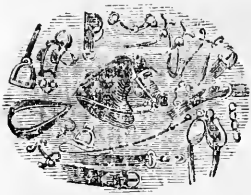
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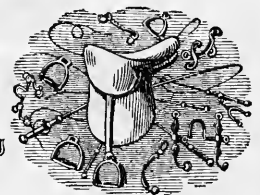
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We also offer a fine supply of FRENCH RED and WHITE CHAFFS, EXTRA EARLY JERSEY, ROCHESTER RED CHAFF, LANCASTER RED CHAFF, by the bushel and sack, and a number of other varieties in limited quantity.

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Edward J. Evans & Co.,  
Nurserymen and Seedsmen,  
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## Button Hole, Overseaming

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SEWING, HEMMING, FELLING, CORDING, TUCKING, BRAIDING, GATHERING, QUILTING, OVERSEAMING, EMBROIDERING ON THE EDGE,

And in addition makes beautiful Button and Eyelet Holes in all fabrics, being absolutely the best FAMILY MACHINE in the world, and intrinsically the Cheapest, for it is two Machines combined in one by a simple and beautiful Mechanical Arrangement. This is, in fact, the only new machine in the market that embodies any substantial improvement upon the many old machines that are being forced upon the public.

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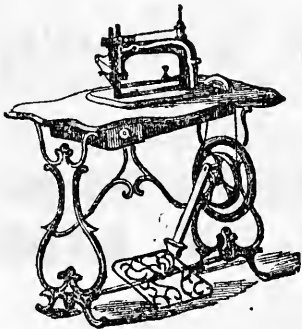
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Instructions given on the Machine gratuitously to purchasers.

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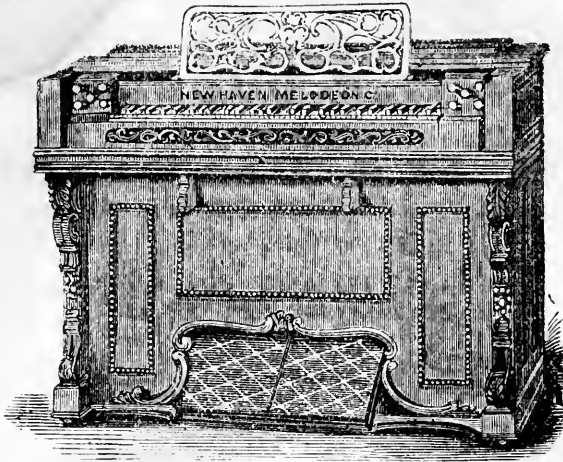
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N. B. The "BOOK OF EVERGREENS," by Josiah Hoopes, sent per Mail, prepaid on receipt of price, \$3.00. Address as above.

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"A ROUND, FULL RICH TONE!"

FLUTO,  
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Is acknowledged by all who have examined it to be the most perfect Reed instrument ever introduced to the public, having been awarded the **FIRST PRIZE**, over all competitors, "for quality of tone and promptness of action." **IT COMBINES ALL RECENT IMPROVEMENTS**, and for **POWER, FULLNESS PURITY OF TONE, AND QUICK RESPONSE TO THE TOUCH**, surpasses all others in its close resemblance to the Pipe Organ. **Its Construction is entirely New**, and different from all other Reed Organs now in use, surpassing all in simplicity and equal to any in durability. The editor of the "TEMPLE OF MUSIC" says:

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TRADE MARK.



And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent* of the Act of Assembly, approved, 31st day of March, 1860, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

H. E. SLAYMAKER, Agt.

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In Gold and Silver Cases which will be sold at prices which will defy competition. Also, a full assortment of

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THE

# Lancaster Farmer

VOL. I.

LANCASTER, PA., DECEMBER, 1869.

No. 12.

## The Lancaster Farmer,

PUBLISHED MONTHLY BY

WYLIE & GRIEST,

INQUIRER BUILDING, LANCASTER, PA.,

At ONE DOLLAR PER YEAR In Advance

UNDER THE AUSPICES OF THE

LANCASTER COUNTY AGRICULTURAL AND  
HORTICULTURAL SOCIETY.

All communications intended for the *Farmer* should be addressed to S. S. Rathvon and Alex. Harris, the resident members of the Editing and Publishing Committees.

All advertisements, subscriptions and remittances, to Wylie & Griest, Printers.

## Essays.

### THE CIRCULATION OF SAP IN THE PLANT.

There has been considerable speculation, and quaint reasoning, upon the subject of the circulation of sap in the plant. We know that many well informed persons hold the theory that the sap never "goes down," or recedes from the plant, because by cutting a branch from a tree in the winter, it will be found as fresh and green apparently in the wood, as it is in the spring and summer, while in full and vigorous vegetation.

A discussion upon this point might involve the question of its rising at all. There is a manifest difference between the life of the plant which always requires a certain amount of circulating fluid, and which causes this freshness in all seasons as long as it lives; and what is termed the circulation of the plant, when the time for active vegetation arrives.

We do not wish to be understood as advocating the theory that sap goes down precisely as it comes up, or that it recedes from the fruit and the leaf, after having performed its functions, in the same condition in which it ascended from the earth. But it becomes exhausted by evaporation, by the appropriation of part of it to the evolving of the flower and fruit, and the assimilation of still other elements, which it carries up from the

ground, by which the plant itself is nourished and built up. *There is a circulation*—a vigorous supply, and a corresponding waste, and a receding or sinking of the surplus sap, all separate and distinct from that freshness and moisture which characterizes the life of all vegetation. We do not mean to say that the circulation and the life can exist separately; but they are two systems, the result of separate functions, with two determinate and positive objects, namely, the germinal vitality, and the growth incident to foliage and fructification.

With this distinction we will see that, whatever may become of the sap, no plant, or tree, or species of vegetable growth is as full of this circulating fluid in the winter as it is in summer. If the sap were up during the chilling blasts of winter the plant would freeze to death, just the same as it would starve in summer if no ascending circulation would take place. Nature has not only established this distinction, but it has contrived and developed the organs so to conform to the seasons, as to have protection of vegetable organism well cared for, and all her laws harmoniously operative and active.

In our series of articles, heretofore, we have endeavored to point out the structural arrangement; we will now, in as plain and practical way as possible, describe the settled theory in regard to the function or process of this circulation.

We have studied the cell system and their arrangement adapted to the appropriation of nutrition to the woody fibre and cellular tissue; we have also noticed the various external conditions which call the organs of vegetation into action: we will yet further note and describe the process of "*endosmosis*," by which a column of sap is forced up through the plant with as much power as the circulation in the animal carries the blood by the action of the heart.

"*Endosmosis*" is simply the absorption of a lighter fluid into a denser one. This constitutes the idea of imbibition. The cells in the growth of vegetation contain a fluid which, by virtue of its organic nature, is denser than the water which is sopped up by the root. This light fluid there-

fore is absorbed by the contents of the cells, and thus a power is obtained equal to from 15 to 45 lbs. to the square inch.

The power thus exerted, emanating from a simple and imbibing function, by the delicate cells which form new rootlets or fibrils, and new tissue at the end of each branch of the root, and every season at the time all nature rises into new life and beauty, becomes a subject of the highest interest and inquiry.

This power can be modified and so divided as to be capable of preserving an equilibrium of the vitality of the plant, and thus extend its life according to the natural power of its species. Were this not the case this vital action would exhaust the fluids of the earth within reach of the root, and so inundate the higher properties of the organism as to destroy its capabilities of producing either fruit or flower.

The supply at the roots, therefore, is regulated by the demand at the extremities and in the leaves. Now, when a plant is placed in circumstances where the conditions of the growth are multiplied, and the demand for this vital action is rendered greater than in ordinary cases, it may be said to live too fast. Its vital forces being overtaxed its energies would soon die out.

*Heat* is a powerful stimulant to the "*vis a tergo*," or impelling force thus exerted. But all the organs must be exposed alike to this genial influence, and at proper seasons. A plant or vine which is hardy, and acclimated to our changeable seasons here, when taken to a southern climate, where the mild winter would be nearly as warm as our summer, would soon lose its vitality, for the reasons, that this stimulant would keep the sap up by every new and increasing circulating action, thus superinducing a growth too rank to bear fruit, and a premature exhaustion and decay.

*Light* is also a condition by which the functions of circulation are called into action. This too must have its proper limits, or the same difficulties might occur, as would befall the plant under an acceleration of heat. Darkness, accordingly, checks the action, and affords a season of repose, and thus prevents an exhaustion of the powers of vegetation. *Darkness* and *cold* being the counter principles of those two elements, have the same influence in inducing a cessation of the circulating action. As great, therefore, as we have seen this *vis a tergo*, or impelling force to be, the rapidity or momentum of the whole action is governed by these silent yet potential conditions, *heat* and *light*.

"The movement of the descending sap offers numerous points which deserve to be considered.

This fluid is strictly comparable to the blood of animals, having undergone a preparation or elaboration in the leaves, which adapts it to the nutrition and extension of the structure, and the formation of the various secretions of the plant. A great part of the fluid of the ascending sap has been lost by exhalation, and the remainder thus concentrated, receives a large additional supply of solid matter through the green cells of the leafy parts, which take in carbon from the atmosphere, so that it now includes a considerable amount of gummy matter, in the state prepared for being converted into solid tissue, as well as numerous other compounds. Now this elaborated sap seems to be conveyed into the various parts of the system, partly by transmission from one cell to another, and partly through the agency of a network of vessels, which takes its origin in the leaves, and extends along the branches to the stem and roots, chiefly in the bark of those parts.

"These vessels are strictly analogous to capillaries, or the small blood-vessels of animals; but they differ with them in this, that the capillary network of animals communicates on either side with large trunks, being formed in fact by the interlacement or anastomosis of their minutest branches, whilst the network of nutritive vessels in plants is everywhere continuous with itself. Not having any communication with large vessels, so that the fluid prepared in the leaves commences to circulate there, which is continued on the same plan until it has found its way to its remote destination in the roots."

According to this author, it will be seen that this downward flow of the sap, which terminates in the root, is after all the principal nutritive element. It only receives its stimulating power in the green substance of the leaf, where it takes in carbonic acid gas from the atmosphere, which renders the sap gummy and capable of nourishing both the plant and its fruit. This function being performed, the residue sinks into the earth, and the frosts of autumn and the chilling blasts of winter, driving all vegetation into a characteristic torpor, circulation ceases, and though the life remains, the *sap is down*.

In regard to the peculiar propelling force in this interesting circulating process there has been much speculation, and various important experiments to test its force and determine its chemical relation to that order of life which prevades the entire vegetable kingdom.

The doctrine of a powerful "*vis a tergo*," that is a propelling force from the root or a single organ, will scarcely explain the phenomena, since in the sap vessel there is no continuous tube or



class of channels from any central propelling apparatus. And the fact, too, that the circulation in a branch of a plant can be kept up some time after it is separated from the parent stock shows that the power is of a general character, and that it proceeds from the influence of external conditions fully as much as internal and functional forces.

*Endosmosis* constitutes a force similar to that which we find in the circulation of the plant. This, in connection with the theory of chemical affinity, will perhaps give us the only solution of the mystery. The one on the principle of the denser fluid imbibing the lighter, and thus carrying it forward from one cell to the other; and the other drawing and appropriating it by the power of this affinity, the sap does not only flow continuously, but in conformity with this affinity, matter is drawn both from the ascending and descending sap into one class of cells to increase the woody tissue, and in another to build up the cellular tissue, and thus in every part that is traversed by those vessels, there are affinities between the solids and fluids which are continually being developed afresh by acts of new growth, as fast as those which previously existed are satisfied, or neutralized by the changes that have already occurred.

In the circulation of the elaborate sap there is a constant attraction of its particles toward the walls of the vessels, and a continual series of changes produced in the fluid, as the result of that attraction.

"The fluid which has given up to a certain tissue some of its materials, no longer has the same attraction for that tissue, and it is consequently drawn from it by the superior attraction possessed by the tissue for another portion of the fluid, which is ready to undergo the same change, and in turn to be rejected for another. Thus, in a growing part, there is constantly renewed attraction for the nutritive fluid which has not yet traversed it; whilst, on the other hand, there is a diminished attraction for the fluid, which has yielded up the nutritive materials required by the particular tissues of the part, thus the former is continually driving the latter before it."

In this highly interesting and beautiful process, the circulation of the plant is explained in entire conformity with physiological principles and the laws which govern the forces of vital action. It certainly approaches as near a solution of the phenomena as the present development of science will warrant. How much of it is due to the endowment of *vital energy* it is impossible to determine; but that this latter bears a leading

and important part in the movement of the sap and nutrition of the plant, no one will undertake to deny.

This subject of the circulation of the sap should be well studied, the better to understand and appreciate the nutritive process, which will be our subject for the next issue of the FARMER.

S. W.

## THE TEETH OF ANIMALS.

### No. IV.

In a county like Lancaster, where so much attention is paid to the comfort and development of stock animals, the teeth become a special object of interest. It is not often that any irregularity occurs in the arrangement or structure of those organs, but when it exists, or when they become diseased, trouble is produced, which is a source of the greatest inconvenience. The horse, or the cow, or the hog, are all liable to diseased teeth; and when they are found to be in that condition it greatly impairs the usefulness of those animals, and often through their inability to eat their food the whole system becomes involved, and sometimes death is the result.

Those irregularities present themselves most frequently in the form of what are termed "*wolf teeth*." When these teeth make their appearance in the mouth of the horse, it is thought that the eye sight becomes affected, and even blindness supervenes. The question has often been asked, in private and in the public prints, "are what is called 'wolf teeth' in horses ever the cause of the horse losing his sight?" We will endeavor to answer this question for the benefit of the readers of the FARMER.

We will say, in general terms, that the teeth are in no direct connection with the eye. They are separate and distinct organs, influenced and rendered capable of the performance of their functions by nerves widely separated and entirely different in size and power from each other.

There may be a mutual sympathy in those nerves, and there often is such a thing as one becoming more or less affected by a diseased condition of the other, and in a nervous animal, such as the horse, this sympathy is much more marked than in almost any other. The optic nerve, or the nerve that supplies the eye for instance, sympathizes largely with the gastric nerve, or that which regulates and supplies the stomach. If, therefore, the colt is overfed, or the horse overheated and overworked, so that the system suffers through the means of the stomach, the eyes are apt to become inflamed and sometimes are destroyed altogether.

This sympathy can cause trouble and danger when the nerves which supply the teeth are affected also. But there is no direct or reflex action between the small supernumerary teeth, called "wolf teeth," and the eye, and therefore, they can never become a direct cause of blindness.

The question may here be asked, what are those teeth, and how can they so derange the nervous system as to cause so much general debility and derangement in those animals?

We have already said they were supernumerary teeth, and as such much more liable to decay, or become diseased than regular teeth. "Sometimes the roots of deciduous teeth are not absorbed, and become what are termed 'wolf teeth.'" Sometimes the points and edges of the teeth are not ground off in chewing, and this form of irregularity becomes what is called "wolf teeth." In all these cases the tendency is to premature disease and decay, and a corresponding excitement of the nervous system. The use of a file will often correct the difficulty, especially when the teeth are not properly ground off in chewing. If a dead root of a deciduous tooth, or what is termed supernumeraries, which become black and dead for the want of room and proper nourishment, they should be extracted at once.

If there is occasion to remove teeth from the mouth of any animal, take an oak pin of pretty good size, and with the point properly shaped, set it close to the gum, and give it a smart tap with a mallet. This operation, however, should be performed with great care lest it be broken off, and the root remain to produce much more trouble than before it was meddled with. Those teeth never stand as firm as the regular ones, and rarely break if the proper appliances are used.

S. W.

## Agricultural.

### FARMING IN LANCASTER COUNTY.

EDITORS OF FARMER: I have thought that it would not be uninteresting to the readers of the FARMER to make a few remarks on the subject which heads this communication. Our farms are sub-divided about as they are in other sections of the State and Union, and yet the particular mode of farming which obtains in this county, and which is famed and spoken of far and wide throughout the country, is much less known and understood than is generally supposed.

Our farms average from twenty to one hundred and fifty acres: eighty acres being about the average size. These farms as a general thing are

worked by the owner of the land, or by his tenant; the owner and a hired man, or the owner and his son together, work a farm of one hundred acres, except in harvest time and haymaking, when some additional hired-help is needed; and in doing so the farmer and his hired-help generally rise at 4 o'clock in the morning, and retire at 8 o'clock in the evening. We could single out many of our principal farmers that are in very easy circumstances, owning two or three large farms, and who work with their hired hands during all seasons of the year, and at all kinds of work, as though working for stipulated wages. We may safely venture the assertion that farmers in this county, as a general rule, work harder than they do perhaps in any other section of the whole Union. This is indeed the great secret of their success in this line of industry.

The West can boast of its large cattle and corn farms; the South of its large cotton and corn farms; they can show their farms of one thousand acres, worth at \$30 per acre, \$30,000; or their farms of two thousand acres, worth \$40 per acre, amounting to \$80,000. We can, however, in Lancaster county, point them out many whose dimensions as to number of acres, by no means run into the thousands, yet whose wealth and annual increase fully equal those of the South and West. I would, in this connection, call special attention to J. L. Erb, of West Earl township, Lancaster county, a farmer who resides near Brownstown, and who owns six farms, three of which average about 40 acres each, and three of which average about 140 acres each; besides about 60 acres of timber land that he owns in the vicinity. Mr. Erb, although the independent owner of these fine properties, yet superintends, manages, and farms them himself. He raises yearly over 3000 bushels of wheat, over 3000 bushels of corn, more than 3000 bushels of oats, about 800 bushels of barley, and about 200 tons of hay; besides a large quantity of clover and timothy seeds, &c. This farmer keeps in his employ a considerable number of hired hands. He mostly keeps mules to do his work, instead of horses, and he feeds and grazes from sixty to eighty head of cattle. His land would command now, if not quite, \$200 per acre on an average all around, and would, therefore, be worth \$120,000. All of this extensive domain this industrious farmer, who has not yet passed the meridian of life, manages and farms himself, and is even now looking around him to purchase another farm, and to add additional acres to his already ample estate; and which, when acquired, he would, no doubt, farm in the same manner in which he is now doing that already in his possession. We

might, in like manner, make reference to many other farmers in Lancaster county who thus superintend and manage their extensive plantations; but it would be difficult to find one to surpass this leading farmer of West Earl.

P S. R.

### BUTTER AND CHEESE CULTURE AS A REST FOR GRAIN CULTURE.

The subject of the general deterioration of the wheat crop in the United States, and especially in Pennsylvania, including our own county, has employed the attention of some of our most thinking and experienced agriculturists for some years past, and essays touching the same question have appeared from time to time in the columns of this journal. In these essays various causes have been speculatively assigned for a result so disastrous and baleful to the agricultural interests of the country, and the common welfare of its people, but very little of a practical character has been suggested as a remedy against such an alarming contingency. The following letter from HON. R. J. HALDEMAN seems to offer some suggestions well worthy of the attention of our farming and grazing population, and, as our sister county of Chester has already made a move in the matter, we feel we cannot do better than to place before our readers, on this occasion, the whole of Mr. Haldeman's and Mr. Willard's letters on this subject, apprehending that the time may come, and that too before many years, when our farmers will be compelled to resort to some system of rest and recuperation for their lands, if they expect to realize a paying compensation for their hard labor. It appears, according to the *Practical Farmer*, that Mr. EBENEZER WORTH, of Chester county, and about four miles from the borough of West Chester, is making arrangements to start an extensive CHEESE DAIRY. We have thought for years that the use of more good cheese and less bad pork would be more conducive to the "health and wealth" of our good old county, than the system that obtains here, as a general thing, at the present time. Cheese and butter will eventually remunerate our farmers better than the incessant routine of cropping and tilling their lands until the very life is worked out of man, beast and soil. Just think, Lancaster county farmers; in the State of New York one of its best counties produced, in a single year, over 300,000 pounds of cheese and over 400,000 pounds of butter, and also sold 287,237 gallons of milk. But this is not the most favorable result, for the county of Herkimer produced and sold in one year 13,893,801 pounds of cheese, and in addition

thereto, nearly 1,000,000 pounds of butter. The product for seven of the best counties of New York, for one year, was 15,267,116 pounds of butter, and 48,851,399 pounds of cheese. Averaging the whole at twenty cents per pound, which would be a fair valuation at the prices these articles have been bringing for the last eight or ten years, the aggregate amount for one year's butter and cheese crop would amount to \$12,823,703.00, a sum total by no means to be "sneezed at." Perhaps it may be said, that notwithstanding all these vast aggregate amounts there may not, after all, be much profit; but this ground would be altogether untenable, for it is not likely such shrewd business men as the thrifty farmers of New York State are, would for years invest so extensively in this business, to the total exclusion of all other occupation, if it were not profitable. We might say something upon the nutritious qualities of well made cheese, but we forbear for the present, and on the general question leave the following letter speak for itself:

LETTER FROM THE HON. R. J. HALDEMAN.

EAST PENNSBORO, CUMBERLAND COUNTY, }  
November 8th, 1869. }

[Editor of *Sentinel*.]

Dear Sir:—While examining the Industrial and Agricultural Statistics of the different States, in connection with the labors of the Census Committee, I was very much impressed by the great importance and development which *cheese-making* has assumed in New York, and I have thought it would be well to call the attention of our farmers to a neglectful branch of industry, by the practice of which their profits may be largely increased, our land rested and improved, and the whole community benefited.

Horace Capron, Commissioner of Agriculture, estimated last year that the average yield of wheat per acre, throughout the whole United States, and taking the new land with the old, had fallen to about (12) bushels, and that the old land yielded considerably less than twelve bushels to the acre. This miserable yield to that branch of industry upon which the true greatness and happiness of the Republic depends, has caused the utmost solicitude among our public men, who, upon investigation, have come to the nearly unanimous conclusion that it results from unscientific tillage, the severity with which the land is farmed, and the absence of sufficient diversity or variety of produce on our farms.

We must give our land more manure, more crops of grass and clover, more rest, and not such rapid successions of corn, oats and wheat.

How can this be most easily and profitably done?

By the extension of the Dairy and Factory system of cheese making which has been so successfully introduced into New York.

In the New York Census Report of 1865, taken under the superintendence of Dr. Hough, I find there were through the whole State in the year 1864:

lbs Butter made.	lbs Cheese sold.	gal. Milk sold.
84,574,458	92,195,337.	29,631,521½

There is thus nearly as much cheese as butter made in that State, although counties like West Chester, Kings and Orange, lying near great cities like New York and Brooklyn, sell nearly all the produce of their cows in milk or butter.

But in these localities where the manufacture of cheese has been fairly tried, we can see how profitable it must be from the rapidity with which it has developed, viz:

lbs Butter made.	lbs Cheese sold.	gal Milk sold.
Cattaraugus.....2,412,223	3,635,356	12,518
Chataqua.....105,205	2,105,642	73,083
Erie.....1,558,575	3,344,734	489,206
Herkimer.....933,118	13,893,801	17,686
Jefferson.....3,100,234	5,348,615	278,237
Lewis.....1,663,950	4,755,043	138,126
Madison.....1,569,842	3,452,682	13,506
Montgomery.....1,035,731	4,207,006	7,885
Oneida.....2,868,740	8,108,540	191,698
15,267,116	48,851,399	

We here perceive that nine counties in the State of New York produce forty-eight millions pounds of cheese and only fifteen millions pounds of butter—more than half the whole yield of the State, which is seventy-two millions pounds of cheese.

I have now reached the point to which I desire to especially call the attention of your readers:—On page 215 of the New York census tables for 1865, will be found a summary of the reports of four hundred and thirty-five (435) cheese factories in that State, which manufactured about thirty-eight millions (38,000,000) pounds of cheese,—two millions more than was manufactured by families. Of this factory cheese, some ten millions of dollars worth is exported, and Mr. X. A. Willard, of Herkimer county, New York, a high authority on cheese manufacture, who was sent abroad in 1866 by the American Dairy Association, to examine into European Dairy and cheese making systems, testifies that it is only inferior to the very best English cheese, and that the "American Factory System now stands pre-eminently in advance of Dairy practice in the world." Impressed with the importance of introducing this manufacture and the Factory System, as a source of profit to our Farmers, as a great relief from severe drudgery to the females of his family, as a rest to the land from too much grain raising, and as a wise diversity of production for our valleys, I wrote to Mr. Willard, asking certain questions with a view to build a factory upon my farm

should public engagements permit. I append his letter, and from farmers and others ask its serious consideration:

LITTLE FALLS, July 11, 1869.

Hon. R. J. Haldeman, near Harrisburg, Penna.:

DEAR SIR:—"Your letter of the 18th came when I was from home, which will account for delay in answering.

A small factory can be put up at no very great expense. You might at first build only the manufacturing department, say a building 25 by 50 feet, two stories high. The upper story in one room, to be used as a place for curing the cheese. In case you were to have the milk from a large number of cows, this building would still do as a manufactory, but a dry house or cheese curing rooms could be erected any size as desired. The expense of manufacturing will depend on cost of material and labor, which varies in different localities, and hence I could not name the sum for your place. You could commence first with one self-heating vat (600 gallons capacity), which would cost, say \$200—other fixtures, \$100. You can obtain experienced builders from New York, and an operator or manufacturer. If you have a dairy on your place, and can take in the milk from neighbors about, should think it would be profitable to erect a small factory. But as a business by itself, generally a less number of cows than 300 will not pay in commission—I mean when you manufacture for others on a commission of 2 cents per pound. But when you have many cows of your own it is of course different and very profitable.

I can give you actual figures on 600 cows commission factory:

Labor, manufacturing and curing at 62 cents per 100 pounds, for 200,000 pounds.....	\$1250
Boxes, bondage, salt, and whatever is required in that line, at 75 cents per 100 pounds.....	1500
Insurance on cheese and building.....	150
12 per cent. on factory cost, fixtures, &c., at \$5000.....	600
	<hr/> \$3500
Factory of 600 cows, running seven months, and making 200,000 pounds cheese, at 2 cents per pound, the usual charge for manufacturings and findings.....	\$4000
Profit, in addition to 12 per cent. interest.....	\$500
With high respect, faithfully yours,	
X. A. WILLARD.	

It will be observed that Mr. Willard makes here no estimate of the farmers' great profits on the cheese, and that he merely shows that the proprietor of a factory which manufactures the milk of 600 cows, will make twenty-two (22) per cent. upon his investment. But let the co-operative system be introduced, and twenty farmers each subscribe \$250 to the erection of the establishment (and co-operative industry is a remedy and protection left us against the colossal accumulation of capital in few hands, which a false

financial system now fosters), and they would not only get twenty per cent. upon their money, but by keeping thirty cows on each farm instead of the present number, they would give rest to the land by holding more of it in grass, have more manure for the remainder, and raise larger crops per acre, and at the same time receive more for their cheese than they now receive for the total products of their farms. I have no statistics of the average yield in cheese per cow in America, but in an English Dairy they obtain about 450 pounds of cheese per cow. That our farmers should, suppose, only average 400 pounds of cheese to the cow, that would be 12,000 pounds per 30 cows, which at 20 cents per pound, would amount to \$2400, or at only 15 cents per pound, would yield \$1800. But the farmers would have in addition to the profits of cheese, as much or more grain from less land, more calves and cattle for slaughter, and a variety of other produce to sell.

Other arguments present themselves to my mind, and here are English statistics showing the importance and profit to be derived from a greater diversity of production on all farms, and a less exclusive devotion to grain raising; but I am afraid that my letter is already too long and will occupy too much of your valuable space. Hoping that I have said enough to call attention to this important subject,

I am, respectfully yours,  
R. J. HALDEMAN.

### PHILADELPHIA BUTTER.

It is very amusing to note the various theories continually put forth to account for "Philadelphia" butter. We have from time to time placed some of those opinions on record, and now add one more from the Boston *Cultivator*. It says:

"First, they always make a first-class article, so their customers, sure of getting the best there is, will not desert them on account of a rise in the price. Second, they bring in their butter in a showy and attractive condition. No pot or delf-ware, no tub or pail of oak hemlock, no vulgar firkin is used to entomb those noble balls, goldenhued with the aroma of white clover and *Poa Pratensis* lingering in the firm grain. A large tin vessel, designed expressly for business, has chambers at each end, into which ice is put. The wooden shelves, about three inches apart, rest on little projections from the sides. A layer of balls is then placed on the bottom and covered with its shell, but not so as to touch or mar the handsome print of a sheaf of grain; which stands out on the top of each ball; on the shelf another layer of prints, and so on till the vessel is full,

they containing forty or fifty pound prints. The tin, with ice in each end, is then set in a wooden tub which has been cooled with ice or spring water. Over this is drawn a cover of padded carpeting, with oil-cloth on the top. Thus hot air and dust are wholly excluded, and the butter rides to the city and opens in the market-house in as fine condition as when packed in the spring-house. In just this way, with this degree of care and skill, is the best Philadelphia butter made, marked and marketed. No wonder the Philadelphians would rather pay seventy-five cents than go back from such manna to the leeks and onions of the common firkin."

Of course, every one knows that "Philadelphia" butter is not made in Philadelphia. All the adjoining counties, and indeed most of the counties of the State, contribute their quota. And of course we all know the secret, which is little more than scrupulous cleanliness, and conscientious industry in working out all the little details which so many other butter-makers know as well as we, but seldom do.

However, if any of our Down East friends would like to have a good receipt for making Philadelphia butter, let them send down a few thousand of their young unmarried farmers to ask in marriage some of our Pennsylvania Quaker or Dutch dairy girls, and we will guarantee that from the rockbound coast of Maine to the land of Goshen they will have Philadelphia butter. We don't know that the girls will go—their chances in the home market are already as high as they desire; but as agricultural missionaries, and provided the "Yanks" bring good hearts to offer them, they might risk their lots with them.

If the foregoing, which we clip from the columns of a cotemporary journal, are the true reasons why the Philadelphia butter is so much better than they have it in Boston, and "Down East" in general, what would the Bostonians say if they had a sight and taste of Lancaster county butter, for we have known even Philadelphians to sojourn in Lancaster city "a day longer," only to get two or three opportunities of luxuriating on Lancaster county butter.

It is true, that a good deal of our Lancaster county butter goes to Philadelphia in mass, but not the best of it goes there by any means; but what *does* go there, it seems, is far superior to that which finds a market at the "Hub." But the reasons for the superior quality of Lancaster county butter are not substantially those contained in the above extract. No special arts and embellishments are resorted to here, in order to produce a superficial effect. Good pasturage, good feeding and attendance, rich cream, careful



management and thorough working, is the whole secret, without regard to the size or form of the masses, or the vessels containing them.

The only cow we saw in passing from Worcester to Boston, in the month of June, was a hungry looking piece of kine, tied to a stake, nipping the "short grass," where we would hardly suppose a Lancaster county wether could find subsistence. Of course, not much good butter could be expected under such circumstances. Ed.

## Horticultural.

### MORE ABOUT FRUIT TREES.

Fruit trees certainly deserve some attention if we expect to reap much benefit from them. In my experience with several orchards that I planted and reared, and from observations taken from my neighbors around me, I will give some little account. The planting we will pass by for the present, and only notice the treatment, &c. Don't coat your trees with tar, paint, grease, nor whitewash. A good, simple treatment is this, clean the tree of borers (a white worm). I take an old, pointed butcher knife, and after cleaning the soil away (funnel like) around the trunk, I get on its track, and soon rout it out; a good scraping wont hurt if there should not be any borers there, and if the tree has rough bark it can also be scraped with something, and then after cleaning away the scrapings from the root, give it a coat of thin, soft soap, or strong soap suds, from the limbs down to the roots, swabing it in well with a brush or broom, and soak the ground a little close at the tree; apply once a year in fall, or the suds twice (say fall and spring), and fill the ring round the tree with fell lime, or clean fresh soil, and allow no grass or weeds close to the tree. To make trees grow fast cultivate them well, and apply the soap, and you will not be troubled with sickly trees.

The finest orchard of clean, smooth bark trees I ever saw were treated with soft soap once a year, and the ground cultivated with different crops, &c. I think it best not to force cherry or peach trees too fast; a high location, somewhat sandy, or stony, or barren soil, seems best for them; seedlings bear the best with me in the peach line. Apples, pears, quinces, &c., should have pretty good soil, manured or fed occasionally. At one time I spoiled a tree full of peaches by pouring salt pickle to it when the fruit were about maturing; the peaches were too salty to use. Another tree had its fruit spoiled by having a filthy sink or drain around it. I would not re-

commend putting much brine or strong substance to the tree while maturing its fruit, although it may be beneficial at other times, if properly applied.

Water is of great service to fruit while ripening if the weather be very dry. Trees that have been on the decline, and looked like dying, have often been revived and made to thrive well by very simple means, a little hunting after the worms, or by applying hot water or chamber lye, or brine, or cut lye, or soap-suds, or lime, or even clean fresh soil after cleaning away the old with the worms, &c. If you will look after your trees properly, and take good care of them, you will not have many sickly ones. In case a tree gets hurt, the bark knocked off, or gnawed by horses, or rabbits, or sheep, or when limbs are sawed or cut off, a very cheap and good healing salve is fresh cow-dung, apply it immediately after the tree is wounded, a trowel or small paddle will answer the purpose (if you are not too delicate to use it), if the wound be very large, bind it with a strip of something to keep the plaster on, and it will heal up very fast. I once healed up a choice young apple tree that was peeled all around by rabbits, by simply greasing the wound with lard, to keep away the rabbits; in the spring a very small strip of the inner bark began to show about the size of a small tape-string, and as it swelled out by degrees I would lay it open slightly with the point of my knife as it crept around the tree, and it healed up nicely. Trees that are crippled will sometimes bear tolerably well, (and should be properly cared for) while others that appear to be the thriftiest will scarcely show a sign of fruit. I think it not best to force fruit trees all the time. Some of the fullest trees that I ever saw were on poor land, they seem to stand the winter better, the fruit buds don't freeze as soon as those on rich land. When trees are injured and likely to give out, they will often throw up sprouts; I sometimes select one of the best, and destroy the others, and keep it trimmed, and if it came out below the graft I graft it, and when the old stem is played out I saw it off, and have a new tree in its place. This plan will do when trees have been peeled with the rabbits, if the sprout be above the graft, it need not be grafted, and it will grow very fast, and save the planting of another in its place, &c.

Some bugs you can chase by giving them occasionally a good sprinkling of soap suds (whale oil and carbolic soaps are very good), the common will do. And some of these patent compounds are not much better. You cannot kill many bugs nor insects with any such stuff, unless it comes in contact with them. But how will you apply it to the



Curculio; they are not easily disgusted by the smell of those patent remedies, and it is impossible to give them a dose. You would come better speed by jarring the trees and catching them without a patent remedy. This might do with a few trees, if attended to until the fruit is too old for them. But how are you going to prevent the insects where there are acres of trees, vines, bushes and plants. Why the greatest discovery of the age ought certainly do it! (See the circular.) The most useful discovery ever known to man, Best's improved fruit tree and vine insect destroyer, Have you read it? Any persons that are green enough to believe or swallow all that it contains, can just send them five dollars to pay for their learning.

One of his recommendations says, "I do hereby certify that I used Best's fruit tree invigorator on my plum-trees in the spring of 1868, and it destroyed the Curculio, and I had a fine lot of plums." Now, does any sensible person believe that the Curculio can be destroyed by applying it to the tree. It seems doubtful whether that person knew what a curculio was. Another says, "It destroys the peach grub, the worm in the heart of the plum-tree, and keeps all destructive worms and insects off the branches." Now Best don't believe this himself, for he says in his directions, "The limbs of plum, apricot and cherry trees should not touch any wooden structure, or limbs of other trees that are not bandaged. So this proves at once that it wont destroy insects that can get on the tree without climbing up the trunk with the saturated bandage. How about the curculio and other winged insects that go from tree to tree without climbing. At another place he says, "It will prevent the curculio from stinging the plums." I don't believe a word of it.

A farmer told me himself that he bought a farm right for \$5.00, and used the stuff according to the directions, and he could not see any difference on the trees that he used the stuff from the others which had none of it. He told me that the fruit dropped, and were stung fully as bad as his other trees that were not treated with the stuff. He says that he saw the warning in the LANCASTER FARMER, to look out for humbugs, but he did not heed it, so he got humbugged, &c. Another farmer used the stuff on his trees, and the fruit fell very much, being stung with the curculis; but still they had more fruit than for several years past; he could not tell whether the Invigorator did it or not. So had we more fruit than for several years past, and we know that Best's Invigorator was not the cause of it. Did not our horticultural tables prove that fruit can be successfully raised without the aid of that (greatest

discovery of the age) wonderful stuff. But yet if you feel inclined to give them five dollars, do so; Yet we think you might spend it more to your advantage by subscribing for some good Horticultural Journal, &c., that will keep you posted up all the time (free gratis), with the most approved plans of treating your trees and vines, &c., &c. To be successful, we would not forget the eternal source of every joy.

Thy praise may well our lips employ,  
Thy hand is full, and richly pours  
Through all our coasts abundant stores,  
If man would only use the skill  
Which is revealed in thy will.  
Dress the trees and they will thrive,  
Keep them growing while we live;  
Still cultivate, and plant again,  
And trust in God to send us rain.

I may plant, Apollus' water,  
Increase comes from God, our Father;  
If God in wrath should so decree,  
That fruits should fail, so we might see,  
That great discovery can't prevent,  
The curse of insects God has sent,  
Then where would Best's discovery be,  
To keep the pests from every tree;  
Which he avows his stuff will do,  
And in the list the curculio.  
If used as the directions say,  
It drives the worms and bugs away;  
You'll find there is not quite enough  
Virtue in that patent stuff.  
If at their bait you choose to bite,  
And then get caught, it serves you right;  
Fruit has been raised and still can be,  
Without that great discovery,  
Their object is to get your money,  
It beats the bugs—aint that funny!  
Five dollars will get you a right,  
To kill and put the bugs to flight;  
It has been tried, and tried in vain,  
But still the bugs come back again;  
It will not keep the bugs away,  
Nor do the half those humbugs say.  
Five dollars for a patent right,  
To drive the bugs all out of sight;  
If worm or bug should come about,  
Give them a dose to drive them out.

Beaver Valley.

J. B. E.

### CHERRIES.

At the late meeting of the American Pomological Society, the President suggested that each delegate should name one variety of cherry which was considered the best and most flourishing in the State where he resided, and the following was the result. The delegates from Washington, New Jersey, Tennessee, Connecticut, New York, and Kentucky, declared in favor of *Coe's Transparent*; from Kansas, Indiana, and Illinois, in favor of *Early Richmond*; from Massachusetts, in favor of *Downer's Late*, and from Canada, in favor of *Old Kentish*. It will thus be seen that from six districts or sections, on the north, east, and south of Pennsylvania; some of the highest pomological authorities have declared in favor of "Coe's

Transparent," as the best cherry for those districts, and in all probability it does, or would do, equally well in this State, and especially in Lancaster county, although no response to the President's suggestion was made from Pennsylvania. The "Early Richmond" was endorsed by three States or districts, all west of Pennsylvania, which does, or would do, probably as well in this State as they do in the West.

Cherry culture in Pennsylvania, except perhaps in some of the eastern tier of counties, does not seem to have received the attention of fruit growers, as it has in some other localities. There are numbers of huge cherry trees on nearly all of our farms, but for the most part the *fruit* is very inferior, and in many places it is not gathered and used. The old *Black Morella*, at one time so common on almost every farm in Lancaster county, has almost disappeared. A red variety, at one time quite as common, has shared the same fate. The "black knot" and the "curculio" have put an "extinguisher" on them. May we not hope that their day will return again? We indulge this hope, because the various culinary preparation of cherries, possess a relish not imparted by any other fruit, in our view.

## Entomology.

At the commencement of our journal, we suggested a plan by which we could be instrumental in diffusing among our readers, from time to time, some entomological knowledge of a practical character; one feature of which was, that our subscribers should institute a series of observations themselves, by capturing and sending to us all insects they found depredating upon their productions. We are sorry to say that they—except to a very limited extent—have not responded to our suggestions. The past season, compared with a number which have preceded it, has been a fruitful and prolific one, and from some cause or other very little injury has been inflicted upon vegetation—or at least much less than in former years. Even if the injuries from insect depredations had been to the usual extent, the prospect of a good fruit and produce crop, overshadowed all observations upon contingencies that might have gone far to prevent it. Another year things may be different, although we sincerely hope that this may not be the case. Our time is too limited, and our opportunities too few, to present a general detailed view of entomology to the consideration of our readers, even if the limited space in our journal permitted it, and therefore we had proposed to confine our investigations to

such special subjects as might be presented to us by our readers; answering their *queries* according to the "best of our knowledge and belief," in a column devoted to that special question.

In closing our first volume, we again call the attention of our subscribers to this subject. We wish them to propound entomological questions, and so far as they come in contact with insects in the pursuit of their daily calling, to secure them and send them to us—the *larvæ*, the *pupa* and the *imago*, together with their written or personal verbal observations upon them, so far as they have made them. In this manner may be developed the information they most need, without bringing the subject before them in such a form as to confound or discourage them by its immensity. If the insect can be sent alive—especially the *larvæ* and the *pupæ*—so much the better, but if they *cannot* be secured alive, send them any way. Portions of the trees, shrubs and plants upon which they are found should also be sent, together with the time and manner of their attacks. By these means will they assist in the diffusion of knowledge, valuable to themselves and their neighbors.

DESTRUCTION OF INSECTS.—The Vinelanders of New Jersey, according to the *Gardeners' Monthly*, have adopted the plan of offering premiums for the destruction of noxious insects, after the manner of European cultivators, and the following list exhibits the result:

### CURCULIOS.

B. C. Campbell, 4416; P. Snyder, 800; A. C. Kinney, 292; D. P. Arnet, 1315; Mr. Burge, 780; A. N. Gage, 121; R. Ingraham, 995; C. Coburn, 480. Other persons having brought in enough to make the total number 9289.

### ROSE BUGS.

Dr. W. T. Young, 29,737; J. McMahan, 955; J. Ingram, 7200; J. C. Parsons, 22,800; Mr. Burge, 10,711; R. Ingram, 7005; E. W. Gray, 18,254; C. M. Goodrich, 8580. Total number of rose bugs, 64,526.

The four highest have been awarded premiums. This plan is practical, and sure, and if rigidly followed, must ultimately extinguish, or greatly diminish the noxious race. But it will require a simultaneous effort, for if only one or two cultivators pursue this plan, they may only have an influx from their neighbor's premises.

We have received the price-list circular of J. G. Kreider, of Lancaster, whose Nursery and Garden lies two miles south of the city. The assortment of plants and seeds of all kinds is very full and complete. Circulars sent free. Address J. G. Kreider, box 103 Lancaster P. O.

## Botany.

### WEEDS—NO. 9.

PLANTAIN OR RIB (CLASS, (GERM., *Wegerich*).

Louden, in his encyclopædia of plants, describes 42 species out of 115 known to botanical writers. Dr. Gray describes 8 species as found in the north-eastern portions of the United States. The two species most common are the broad-leaved plantain, *Plantago Major, L.*, and the pointed-leaved ribble grass or rib grass—*Plantago Lanceolata*. The common English name, "Way-bred," and the German, *Wegetritt*, as also, no doubt, the generic name, from "planto," the sole of the foot, and "ago," to act or exercise, have arisen from the fact that it chiefly grows along paths in yards, and across fields. Louden informs us that the *Plantago Major* is a native of most parts of Europe and of Japan, and always grows by way sides. This is an introduced plant, and has followed the emigrants from their earliest settlement. The Indians noticed this fact, and gave to the plant (in their own language) the name "white man's foot." The rib grass has seeds about the size of clover, and it is difficult to separate it from clover seed; our farmers call it "Spitze Wetterich," a corruption from the true German name, "Spitzicher Wegerich," to distinguish it from the broad-leaved. This admixture always lessens the value of the clover seed, and hence should be guarded against. It is fortunate, however, that it is not much inclined to spread in cultivated fields, but sticks to the pathways and yards. The broad-leaved plantain has had some reputation in a medicinal point of view, to dress blistered surfaces or sores. This was known to Shakspeare, as we read in his play of *Romeo and Juliet*. Act 1, Scene 2.

Enter Benvolio and Romeo.

*Ben.*—Tut, man! One fire burns out another's burning,  
One pain is lessen'd by another's anguish  
Turn giddy, and be help by backward turning:  
One desperate grief cures with another's languish.  
Take thou some new infection to the eye,  
And the rank poison of the old will die.

*Rom.*—Your plantain leaf is excellent for that.

*Ben.*—For what, I pray thee!

*Rom.*—For your broken shin, &c.

Dr. Darlington facetiously remarks upon it as a "shin plaster." That the plantain leaf continued in vogue, for that purpose, until a *substitute* was furnished by modern experimenters, in their empirical attempts to regulate the national *currency*. (He wrote this in 1846).

The Assembly of South Carolina, many years ago, rewarded a negro for publishing a recipe to

cure the bite of a rattle snake. Woodville, in his medical botany, says that the plantain was the principle ingredient. Modern authors, however, ignore the plant, be its merits what it may.

It is interesting, however, to know the history of our common weeds; and having commenced to bring them before the readers of the LANCASTER FARMER, I may, for a time, continue to do so as a matter of pastime, if not of any special benefit to the public. J. S.

## Editorial.

### MEETING OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular monthly meeting of the Agricultural and Horticultural Society was held at the Orphans' Court Room, on Monday afternoon, Nov. 1st, 1869. In the absence of the President, H. K. Stoner was called to the chair. The minutes of the previous meeting were read and approved by acquiescence.

H. K. Stoner exhibited specimens of White Malaga and Black Hamburg grapes. J. B. Erb had a bottle of raspberry wine made last summer, and also a quince which was the second growth of the season. John Huber exhibited two apples, and asked that they be named by the Society. Two varieties of potatoes were shown by J. H. Zercher, and a name was desired therefore. John K. Reed sent to the meeting several clusters of Clinton grapes which were the second growth of the season. Jacob Frantz, of Paradise, presented for distribution among the members cuttings of the Israella grape. H. K. Stoner had with him a box of Sheldon's Improved Compound for the destruction of insects. Mr. Stoner had received a number of boxes of the article for distribution among the members of the Society. Society on motion adjourned.

### CLOSING REFLECTIONS.

The present number completes the first volume of the LANCASTER FARMER, and, therefore, it has a "local habitation and a name" in the Agricultural and Horticultural literature of Lancaster county—and the whole country—and has become identified with her in history. By reference to our table of contents, published with this number, notwithstanding the limited space to which we have been confined, by the peculiar circumstances which brought our Journal into its being, it will be seen that it contains, on the whole, a comparatively large amount of useful matter on various topics that is interesting and

instructive to the general reader. We feel assured that none of our subscribers and advertising patrons have any reasonable grounds to regret the helping hands they have extended towards us, in carrying our enterprise through the year, and trust that they will continue in this species of "well doing" through the time and times that are coming. The editing and publishing committees have been doing what they could, under all the circumstances, towards making the FARMER a welcome local visitant to the "hearths and homes" of their patrons. However far their efforts may have fallen below the "general expectation," and whatever imperfections may appear in the general conduct of the journal, they feel that none can be more sensible of them than they are themselves. Without intending to make any special pledges, they, nevertheless believe, that with proper encouragement, the LANCASTER FARMER will more than redeem in the future what it seemed to lack in the past. They, therefore, again respectfully and kindly call the attention of the patrons of the Journal, to the proposition contained in the editorial of the November number, and trust they may not call in vain. We may say that we are almost on the threshold of another year, and in reviewing the past, many of us, doubtless, may propose to "turn a new leaf" in the things that relate to our personal affairs. All this *may* be right, but the very fact that it is susceptible of a *may be*, evinces a possibility of its being wrong. Not by any means that it is *wrong* to turn the leaf, but that the right or wrong of it depends upon whether we turn it backward or forward. Let us be sure that we turn the leaf *forward*. Let us be sure that while we proscribe the "pence" that ought to go towards the support of the FARMER, or some other journal, we do not, at the same time, squander the "pound" in sensual self-indulgence, for this is surely turning the leaf BACKWARD. When we reflect upon the daily denial we are required to make for the support of the FARMER, and compare it with other useless, and often injurious outlays, it becomes astonishingly small, and we almost blush in our closets, to think that we had proposed to proscribe it. A little more than three-tenths of a cent a day, is all that is required out of our abundance. The commonest cigar, or a mug of beer, costs us from thirty to fifty-tenths, and these pander only to the sensual man. Cigars and beer are often bloated with repletion, whilst literature and intellectual labor go begging for a scanty subsistence. Let us turn that "new leaf" in our book of life, which teaches us that this shall not continue to be our case, as intellectual caterers and patrons during the coming year.

During the year 1869, which is now in the twelfth hour of its annual "watch," taking it as a whole, our county, and our entire country, has been prosperous and peaceful, as well as healthful. It is true, that some inequalities still exist in regard to the prices of the various human productions which so vast and varied an empire yields, but these in time, we trust, will find their proper level and correction, in the common nature of things. Since the outbreak of the civil war, now happily terminated it is hoped forever, a new epoch has commenced in our history, and we are therefore still measurably in a transition state. The boilings and surgings of bygone years are gradually coming down to a simmer, and with patience and self-denial, tranquility in all things must ultimately be restored, for it cannot be, under God, but that our progress must be upward and onward. In social and political commotions and mutations, all interests are more or less effected, and perhaps none more so, either for good or evil, than those of Agriculture and Horticulture, because these are also subjected to climatic influences, which many others are not. But under the most adverse circumstances, the health and habits of the farmer are such as to shield him from much of the suffering and deprivation which is experienced by those in other walks of life. The independence of an American farmer is an enviable one, for while "he turns the furrow and scatters the seed, he feels that he does not labor for a master." And although midday suns may brown his complexion, and his hands by rustic toil become callous as a horn, yet he has a heart that is as tender and accessible as the most humane, and a head as capable of intellectual culture as the most refined; and therefore, in the improvement of his "farm," he will not neglect his "fireside." As a messenger and improver of that fireside, as well as the farm, we propose to lay upon his table the LANCASTER FARMER for 1870, if he has not already become a subscriber to 1869. If he has that local pride which legitimately grows out of a love of country, he will welcome it to his domicil, not only as a paying subscriber, but as a medium through which he may diffuse his own individual light on his professional calling, and which, notwithstanding the army of writers already in the country, is so much needed in his immediate county. Although the great bulk of our support ought to come from the farming interests of Lancaster county, yet it is not to them alone we look. Every man and woman, who possesses a garden and a household, ought to subscribe for it, and all of sufficient intelligence and experience should contribute to its columns. Before the appearance of our next



number, our annual Christmas festival will have passed, and we cannot close our remarks on this occasion more appropriately than by the usual greeting, of wishing our patrons and others—*A Merry Christmas*. May they remember that it commemorates the anniversary of the “coming” of Him, who was “in the beginning with God, and who was God,” and who *gave*, as a living and perpetual example, that we should also *give*.

#### ADVERTISEMENTS.

As the LANCASTER FRAMER has a wide range of circulation, copies being sent to various parts of Pennsylvania, to Massachusetts, New York, New Jersey, Ohio, Kentucky, Illinois, Missouri, Kansas, Nebraska, and even to California and the Sandwich Islands, it must therefore be a proper medium for the advertisement of agricultural and horticultural implements and inventions, as well as general commercial and business concerns. Will our subscribers and readers hold this fact in consideration, and send in their advertisements of what they manufacture, produce, and have for sale? In this way they may be “killing two birds with one stone”—the *pigeon* for us, and the *turkey* for themselves. For their liberal encouragement during the *present* year, we return our sincere thanks, and respectfully solicit a continuance of the same during the *coming* year. The power of a good advertisement, in a respectable journal, is universally acknowledged, and the name of *Lancaster county*, throughout the Union, has long been a sure indication that whatever emanated from it is worthy of the consideration of the public.

### Miscellaneous.

#### ENCOURAGING THIEVES.

A large dry goods firm in a neighboring city has suffered recently by dishonest employees, like many other establishments in that and other cities. Investigation, through the agency of the detective officers, has led to the confirmation of a fact, well known, probably, to the police, but not so well known, as it should be, to the public. The goods purloined were converted into cash, through the agency of hawkers and pedlars, even licensed pedlars being engaged in the business. Of course, the articles go through the hands of a receiver, in the slang of thieves called a “fence.” He employs men to dispose of them, who pretend to be hawkers or pedlars. Operators in such a line of business cannot fail to make good profits, though they sell their wares at “a ruinous sacrifice” to the parties robbed.

Sometimes the seller pretends that the articles are smuggled, and as it is too common to consider cheating the revenue a venial sin, the purchaser has no objection to share in a thing so clever, when he supposes it is to his profit. The rogues do, perhaps, sell “bargains.” But they are not at all above cheating those who buy of them too; and may steal besides, if the opportunity offers, as many a simpleton has discovered to his or her cost. Fair dealing always pays best in the end.

Sometimes the hawker has a woful tale of distress, and then the purchaser is willing to take advantage of the pretended necessity of another. But while he fancies he is imposing upon poverty, he is really helping the ring of thieves to realize upon the fruits of their knavery. The safe rule is treat all hawkers of these descriptions with suspicion. Especially, avoid all mysterious individuals. There is always a shrewd reason for this kind of mystery, and it usually is, that roguery may be concealed. If thieves and receivers were not assisted by thoughtless and often unconscious buyers, as well as unscrupulous ones, there would be less of all grades of thieving, from petty larceny to burglary. There would be less, too, of a crime which is unfortunately more common than burglary—the cheating of employers by dissipated and thievish clerks, porters, watchmen and workmen. It is a sad state of things when a man can not trust those who are earning of him their living. All confidence is disturbed by such crimes; and buyers cannot be too careful in avoiding whatever may tend to encourage thieves. Know your man before you deal with him, or know, at least, that he is engaged in fair and legitimate business, which needs no winks and whisperings. Who cheats another will cheat you if he can. With reference to that particular class of swindling hawkers, who pretend to sell smuggled goods, the man or woman who is approached by one of them should always think, “here is a knave that I should turn over to the police, instead of driving a bargain with him.” “He admits that he has been cheating the Government, and now he asks me to aid him in his rascality.” Or if the person approached is not disposed to prosecute the knave, it should be borne in mind that, as he has cheated the Government, and is also defrauding honest merchants and tradesmen who pay the custom house duties on the foreign goods they import, he will not hesitate to cheat the customer who is weak enough to buy his fraudulent wares, as he nearly always does. These fellows go about in a sort of sailor garb, with large packages under their arms, and always affect either a strong foreign accent or sailor talk. Their wares are generally silks, shawls, laces, dress goods, &c.,

pretending to be fine foreign goods, smuggled into port, but nearly all spurious imitations got up for this very traffic, and dear at any price. If they are ever genuine goods, they are probably stolen. No one can deal with these putative "smugglers" without making themselves parties to fraud or robbery, besides being cheated in the bargain.

The above article, taken from a recent number of the *Public Ledger*, may be read with profit in this locality, for the class of traders it refers to are frequently found "sneaking" through this city and county, and vending wares that are either worthless, or if worth anything sold so cheap that they must have been stolen or obtained with fraudulent intentions. These fellows, for the most part, are unlicensed sharpers, under the guise of simple-mannered adventurers, and operate upon the credulity of the unsophisticated in town and country, who often buy from them to get rid of their importunities. If they sell by weight or measure, both are always found wanting; and if by the "lump" or lot, the lots are of such unusual and impractical quantities that the intended use, in many cases, cannot be made of the purchase. In not a single instance, of the many that have been brought under our own observation, have we considered, under all the circumstances, that the purchaser had made a good bargain, or if a bargain at all, any better one than they could have secured at a responsible licensed store in the regular line of trade. We therefore coincide, in the main, with the sentiments contained in the foregoing remarks in the *Ledger's* editorial, although we are not sure that many of the duped themselves will harmonize with us in sentiment. There seems, to us, to be such an unaccountable romance in being cheated, on the part of many people, that warnings of any kind only appear to be thrown away. Perhaps these otherwise prudent and single-minded people hope to make up, in dealing with a subsequent set of these sharpers, for what they may have lost with a former set, but this is also the very "vanity of vanities." These "jay-hawks" are entirely too sharp for that. Buy worthless trash from them once, and, as though you gave them a legitimate lease on your credulity, they will find you out and cheat you again. But there is another phase of the subject, in which is involved a question of morals. By encouraging these irresponsible dealers, we may at the same time be encouraging thieves, although we may be doing it unwittingly. These fellows, as a general thing, take out no license, pay no government tax, contribute nothing to the support of the poor of the county, and in some instances do not even pay their boarding, and therefore in effect, these omissions become

commissions, and are allied to thieving. Another evil aspect of the subject is, that those who encourage these jay-hawks often deprive themselves of their ready money by purchasing what they really *do not* want, only because they suppose it is cheap, and then are compelled to get on credit what they really *do* want. This is not even-handed justice, nor is it all in accordance with that *golden rule* which requires us to do unto others as we would that they should unto us. It is also confidently believed by many shrewd and intelligent people that one purpose—and perhaps the main purpose—of some of these itinerant dealers is to make observations and plans for robbing the premises which they visit. And, as if these surmises were not altogether groundless, these traveling gentry often pass, without the least ceremony or forewarning, into kitchens and sitting-rooms, where they may expect to find no one but the females of the household. It is very certain that many robberies take place which cannot be accounted for on any other principle than that the robbers must have had some previous knowledge of the premises which they have robbed. If any one of our readers have been overreached in dealing with these knaves, we would recommend them in future to assume the attitude of the plain old Quaker, who said:—"Thee cheated me once, that was *thy* fault, but if thee cheats me again it will be *my* fault." Of course, we are no advocate or encourager of extortion, but in an experience of forty years we have found that those people whose acts and purposes have been to get things at less than their real value, have not made any greater moral and pecuniary advancement than those who have rendered to every man what was justly due to him.

#### POTATOES AND THEIR WINTER MANAGEMENT.

The potatoe crop is ranked in importance but little lower than that of wheat or corn, and while the cultivation necessary to produce good crops of corn and potatoes is nearly or quite the same, the after management is essentially different. Many ways are adopted by farmers to keep their potatoes from freezing during the winter, each one probably thinking he has the best plan, but, doubtless, many times he has been obliged after all his care and labor, to bear the loss of a part, if not all, of some of his choice varieties.

We will agree that a good cellar is a fine thing, and almost indispensable, and most of us try to have some place, though it be ever so small, where choice articles may be free from frost, but



there are few who can find room in the cellar for all their potatoes.

The plan I have adopted, and one highly recommended by others who have tried it, is to dig a pit, three feet in diameter at the top of the ground, and after descending two feet gradually increase the size till it is six feet and a half across at the bottom, and eight feet deep. After filling up the pit to within two feet of the surface of the ground, build up with sticks or pieces of boards, gradually drawing in till the opening at the top is about eighteen inches across, and bank up around to keep out the surface water. A piece of board and some straw is usually sufficient to keep out the frost, and potatoes put up in this way are said to keep good a whole year. The pit will hold eighty bushels, and with but little repair will last several years.

There are several varieties of potatoes justly celebrated for their excellent qualities for table use, as well as for their productiveness.

I would place the Early Rose first for early, and the Harrison for late.

The latter part of June I received from George W. Best, of Utica, N. Y., two pounds of the Early Rose, and the yield from them has been four hundred and eight pounds. I planted one bushel of the Harrison and have realized of their product eighty-seven bushels, one potato weighing four pounds, and another one three. More anon.—*Central Union Agriculturalist.*

### STORING CELERY.

Many people complain of their celery—one of the most difficult garden crops to raise to perfection—that it does not keep well through the winter—sometimes it withers, but oftener it rots. It is asserted by some that it should be preserved in the rows where it grows, and that removal always more or less injures it. Where the plant is grown in soil of a dry nature, it may be kept well enough in the row, but we deny most emphatically that removal injures it in the slightest particular.

We pursue two modes, and find both answer well. The first is to remove the celery to high and dry ground, dig a trench spade deep, stand up a row of plants; then three inches of soil, then another row, and so on until about half a dozen rows are finished, then commence another bed, and so. The soil should be packed in firmly, and banked up, so that the tops of the celery are just covered, then spank off roof fashion to turn the rain. Over this two wide boards, nailed together, should be placed, as a security against moisture. For remember, it is water, not frost,

as some say, that rots celery. Frost adds to its tenderness.

Another plan is to sink barrels into the earth, so that the tops are two or three inches below the surface, then fill them completely full of celery, without any soil, but with close or tight covers upon them, so as to exclude moisture, and then a couple of inches of soil. By this mode, somewhat more troublesome than the other, ours kept well for the last three or four years until all was consumed, which was late in the spring.—*Germantown Telegraph.*

### DOMESTIC RECEIPTS.

#### WEDDING-CAKE PUDDING.

Four cups of flour, half cup of butter, teaspoonful of soda, one cup of molasses, one cup of currants or raisins, a teaspoonful of salt, steam it three hours. Sauce—a half cup of butter, one cup of sugar, beaten to a cream, one egg well beaten, one glass of wine, a wine glass of boiling water, steam five minutes.

#### CIDER PUDDING.

Two pounds of flour, two teacupsful suet, chopped fine, a cupful of raisins or currants, mix well with cider until it is a stiff batter, boil two hours. This will be found equal to plum pudding.

#### WESTERN JELLY CAKE.

One cup of butter, two of sugar, three and a half of flour, four eggs, one cup sour cream, teaspoon of soda. For the jelly make a custard of one pint of milk, three eggs, sweeten to the taste; just as it boils thicken with flour to the consistency of custard, flavor with vanilla.

#### GINGER CAKE.

One and a half cups of molasses, one do. very full of shortening, six do. flour, mix the shortening and flour together; tablespoonful of soda dissolved in three-quarters of a cup warm water, tablespoonful of ginger.

#### MOLASSES PIE.

One cup of molasses, one do. sweet cream, one egg, two tablepoons flour, one-half nutmeg. To be baked without tops.

#### RECIPT FOR LIGHT DUMPLINGS.

After making your bread the second time, take off a sufficient quantity for dumplings, and set it away until about an hour before dinner, then make them up in rolls as you would biscuit, sprinkle a little flour over your pie board and put them on it, far enough apart to allow for raising. Have ready a boiler with sufficient boiling water to steam them, place the steamer over it and put in some of the dumplings so as not to touch each other, (see that the lid is placed on tightly) and

let them remain ten minutes, then remove them and put in others. Send them to the table hot, to be eaten with cream and sugar, or butter and molasses.

### CHESTNUT CULTURE.

Perhaps few of our readers are aware that the chestnut tree can be grafted, and the crop of chestnuts increased and very much improved. A few days ago we were shown a handful of very fine and large chestnuts by our horticultural friend, Mr. Peter Riley, of this city. These chestnuts were grown in Montgomery county, in this State; were about the average size of the whole crop, and measured from one and a quarter, to one and a half inches broad, and about one inch in length, and sell in the Philadelphia markets very readily at *fifty cents* a quart, or from eight to ten dollars a bushel at wholesale, which affords the retailer a very handsome profit. The spines on the burs are not near so long as those on the common wild-chestnut, and, therefore, the burs themselves do not seem so large as the wild variety, and there are almost universally three chestnuts within one bur. The trees from which these nuts were taken, were grafted on the common chestnut sprouts about six years ago, and they have been bearing good fruit crops for the last three years; so that three years after the trees were grafted they began to have fruit. Our enterprising experimenters in fruit raising, perhaps, would do a good thing, by giving this subject their respectful attention.

**HOW I MAKE DUTCH CHEESE.**—I am a farmer's girl, and can make a tip-top "Dutch cheese." I have made enough in my life to make a small Egyptian pyramid, and the following is my "modus operandi." Take a quantity of newly lopped milk, place it in a kettle over a moderate fire, and let it heat gradually until the curd is entirely separated from the whey; then add your salt and add a small piece of butter, and when these are thoroughly worked through the curd form it into small balls. If you cook the curd too long it will be tough and stringy.

**CURE FOR GLANDERS.**—A correspondent of the Southern Cultivator asserts that a large stable of horses and mules affected by glanders were saved by giving to each a teaspoonful of tartar emetic three times a day for six days, consecutively; then discontinue the dose for six days, when the treatment was repeated on such as were not well. The animals were fed and worked as usual during the treatment, and not one was lost of those so treated.

**EARLY ROSE POTATO**—*Extraordinary Yield.*—Mr. Hurlburt, of Union Precinct, Nebraska, planted one-half bushel of the Early Rose Potatoes which yielded him thirty-six bushels, and his brother planted two bushels of the same variety from which he dug 120 bushels.

**FALL PLANTING OF TREES.**—More trees are transplanted in the Spring than the Fall, because such is the custom. But most fruit growers prefer Fall planting. During the winter, while the tree is at rest, the roots and rootlets accommodate themselves to the new ground, so that in spring, when growing time arrives, they are ready without loss of time to strike out their fibres in every direction. A tree well planted in Fall gains nearly a year over one planted in the spring. This is said to be the experience of those who have tried both Spring and Fall planting.

Trees may be planted from now until the ground is frozen. The Indian Summer is probably the best time for planting.

We advise persons who are setting out trees to select only the choicest varieties. Don't plant a young tree merely because it costs you nothing.

**ROLLS TOMATOES.**—Make crust of sour milk, soda, butter and flour. Roll out, in small pieces, about one-fourth of an inch thick. Pare and slice tomatoes and lay the slices on the pieces of dough; roll and bake. To be eaten with sugar and cream.

### Review of Markets.

#### PHILADELPHIA GRAIN MARKET.

Thursday evening, November 25.  
Flour.—The market continues dull, and the inquiry is confined exclusively to the wants of the home trade. About 840 bbls changed hands at \$5<sup>05</sup> 37<sup>1</sup>/<sub>2</sub> for superfine; \$5 44<sup>05</sup> 62<sup>1</sup>/<sub>2</sub> for extras; \$5 75<sup>05</sup> 25 for northwestern family; \$5 75 up to 6 50 for Pennsylvania and Ohio do., including fancy lots at \$6 75<sup>05</sup> 7 50. Rye Flour is lower; sales at \$5 75. In Corn Meal no movement.

Grain.—Wheat is dull and rather lower; 3500 bushels of Delaware red sold at \$1 33<sup>1</sup>/<sub>2</sub> 36, and 2800 bushels of Pennsylvania and western at \$1 32<sup>1</sup>/<sub>2</sub> 33. Rye may be quoted at \$1 07 at 10. Corn is higher, with sales of 3500 bushels yellow at \$1 12; 6000 bushels new do. at 87<sup>05</sup> 95c, and 3000 bushels western mixed at \$1 10. Oats are in fair request, and 5000 bushels western Pennsylvania sold at 60<sup>05</sup> 61c. The receipts to-day are as follows: 1925 bbls flour, 6325 bushels wheat, 8650 do. corn, and 7469 do. oats.

Seeds.—Cloverseed is in fair demand; 350 bushels sold at \$7 50 <sup>05</sup> bushel. Timothy is quoted at \$3 37<sup>1</sup>/<sub>2</sub> 3 50. Flaxseed sells at \$2 35 <sup>05</sup> bushel.

#### HOUSEHOLD MARKET.

Lancaster, Nov. 24.

Butter was held and sold at the opening of the market mostly at 50c., but there was an over supply at that price, and late in the morning it was freely offered at 45 and some at 42c.; Lard 20a22c.; Eggs scarce at 40c., while some were sold at 45c per doz; Beef, by the quarter 9<sup>1</sup>/<sub>2</sub> 10c. for front, and 11<sup>1</sup>/<sub>2</sub> 13c. for hind quarters; small Pork by the quarter 16<sup>05</sup> 17c <sup>05</sup> lb.; poultry was abundant; and Turkeys \$1<sup>05</sup> 2 each; live Chickens 50a90c. <sup>05</sup> pair; do. Geese \$1 25 each; dressed Chickens 35<sup>05</sup> 55c. each; do. Ducks 30a60c. each; Rabbits 25c. each; Potatoes 45<sup>05</sup> 60c. <sup>05</sup> bus., according to quality; Turnips 45<sup>05</sup> 60c. <sup>05</sup> bus., and 6a8c. <sup>05</sup> <sup>1</sup>/<sub>2</sub> peck; Onions 18a20c.; Apples 15a20c.; Walnuts 10a13c. <sup>05</sup> <sup>1</sup>/<sub>2</sub> peck; Chestnuts 18a20c.; Beans 10c <sup>05</sup> qt.; Buckwheat \$1<sup>10</sup> 20 <sup>05</sup> quarter of 25 lbs.; Corn in the ear 85a90c. <sup>05</sup> bus.; Oats \$1 65a1 80 per bag of 3 bus.

# World Mutual Life Insurance Company,

NO. 160 BROADWAY, NEW YORK.

**J. F. FREUAUFF, General Agent,**

No. 5 North Queen Street, Lancaster, Pa.

## LOCAL AGENTS:

A. B. REIDENBACH, Litiz, Lancaster County, Pa.

SAMUEL L. YETTER, Elizabethtown, Lancaster County, Pa.

J. M. GRAYBILL, Columbia, Lancaster County, Pa.

Average per centage of realized cash assets to total assets of the New York Life Insurance Companies, December 31, 1868.....	.6334
<b>Per centage of the World Mutual.....</b>	<b>.7454</b>
Average of losses paid to total income of the New York Life Insurance Companies.....	14.58
<b>Per centage of the World Mutual.....</b>	<b>11.08</b>
Average of losses to amount insured of the New York Life Insurance Companies.....	.82
<b>Per centage of the World Mutual.....</b>	<b>.49</b>
Average of realized cash assets on hand for each dollar of insurance liabilities (25 companies) excepting Companies commencing business in 1868.....	.5240
<b>Per centage of the World Mutual.....</b>	<b>1.3550</b>

## LANCASTER REFERENCES:

JACOB BAUSMAN, President Farmers' National Bank.

Maj. JAS. F. RICKSECKER, City Treasurer.

CHRIS'N B. HERR, Pres't Lancaster Co. Nat'l Bank.

N. ELLMAKER, Esq., Attorney.

Messrs. BAIR & SHENK, Bankers.

B. F. BAER, Esq., Attorney.

Judge A. L. HAYES.

Col. WM. L. BEAR, Prothonotary.

J. F. LONG & SON, Druggists.

*No farmer is justified in exposing his creditors, his wife, or his children, to the loss certain to occur to them upon his death, without a Life Insurance Policy for their benefit, and in no Company can this be done with more safety and under better management than in the above. See one of their Agents and have him explain all about it.*

**\$200.**

**\$200.**

HARVEST OF 1869.

## "THE VALLEY CHIEF"

### A COMBINED SELF-RAKING REAPER AND MOWER.

After our success in the Harvest of 1868, in pleasing our customers with a neat, light, durable, and a complete Combined Harvester, we again come into the market for the Harvest of 1869 with our VALLEY CHIEF feeling a great confidence in its superiority.

We offer this machine still at the low price of \$200, and when a farmer is offered a first-class Mower and Self-Raking Reaper Combined at this price, it is well for him to examine into the merits of the offer. As a Mower, it has been tried in the worst kinds of heavy meadow grass and lodged clover and has gone through it triumphantly, and we call on our hundreds of customers in Lancaster county and elsewhere to speak a good word for the Marsh Self-Rake. We claim that this Self-Rake in heavy tangled grain or lodged oats is the most simple and efficient one ever invented. It is not a new thing, but has been most severely tested all over the United States, as well as in England and France. We think no other one in the market can fairly compete with it. See what the report of the great National Reaper trial held at Auburn, New York, by the New York Agricultural Society, says on page 41 and 42: It performed better than was expected of any Self-Rake, as it raked off heavy, tangled, wet grain. And in their language, Reapers are not built for so severe a test; they gave it the highest mark for perfect work.

The VALLEY CHIEF is a simple two-wheeled machine, having side delivery which throws the grain entirely out of the way of the team for the next round. It has a rear cut, a floating finger bar, the guards or fingers are made of the best wrought iron, faced with steel. The height of the cut can be altered with ease while in motion, thus enabling one to pass obstructions or cut long or short stubble and the whole machine is built with an eye to convenience, simplicity and durability. This Machine is built in Lancaster county, one of the heaviest grass and wheat growing districts in the United States, and we have had every opportunity of knowing what is wanted. In this machine we have a combination of a complete Mower with a first-class Self-Raking Reaper, thus giving our customers a simple, strong, and handy machine which two horses can draw with ease.

Please call and see this machine at our manufactory, in Mount Joy, Lancaster county, Pa., or on D. Burkholder, Agent, at Mrs. Neher's Saloon, Southwest corner of Centre Square, Lancaster, Pa., or at Yundt's Corn Exchange Hotel.

**MARSH, GRIER & CO.**

LANCASTER, June 25th, 1869.  
 EDITORS EXPRESS Dr. Wm. M. Whiteside, the enterprising Dentist, has purchased from me a large stock of teeth and all the fixtures, the instruments formerly belonging to me, and also those used by my father, Dr. Parry, in his practice. In the purchase, the doctor has provided himself with some of the most valuable and expensive instruments used in dental practice, and has beyond doubt one of the best and largest collections of teeth and instruments in the State. Persons visiting the commodious offices of Dr. Whiteside, cannot fail to be fully accommodated. The Doctor loses no opportunity of furnishing himself with every late scientific improvement in his line of business. H. B. PARRY.

## W. M. WHITESIDE, DENTIST,

Office and Residence,

EAST KING STREET,

Next door to the Court House, over Fahnestock's Dry Goods Store,

LANCASTER, PENNA.

*Teeth Extracted without pain by the use of  
(Nitrous Oxide) Gas.*

## BOOKS AND STATIONERY.

A Full assortment of

SCHOOL, MISCELLANEOUS, AGRICULTURAL AND HORTICULTURAL BOOKS,

A large stock of

## STATIONERY,

WHICH WILL BE SOLD AT

## GREATLY REDUCED PRICES,

On account of removal April 1st, 1869, to

No. 52 North Queen Street,

(KRAMP'S BUILDING)

Four Doors above Orange Street.

Subscriptions received for all the Agricultural and Horticultural Magazines.

J. H. SHEAFFER'S

Cheap Cash Book Store, No. 52 N. Queen

Street, LANCASTER, PA.

## Dr. N. B. BRISBINE,

No. 93 EAST KING STREET, ABOVE LIME.

The Doctor pays special attention to all old obstinate diseases, such as Consumption, Liver Complaint, Dyspepsia, Rheumatism, all diseases of the Heart, Head, Throat, Lungs, Stomach, Bowels, Kidneys, Nervous Debility, General Debility, &c. The doctor makes examinations of the Urine. Consultation Free.

## S. WELCHENS, D. D. S., SURGEON DENTIST,

Office and Residence,

HOWELL'S BUILDING, No. 65½ NORTH QUEEN ST.,

Half a square south of the R. R. Depot.

Twenty Years' Successful Practice in Lancaster

The Latest improvements in INSTRUMENTS and TEETH and the very best material, Warranted in all operations.

TEETH EXTRACTED WITHOUT PAIN with the use of Nitrous Oxide Gas, Ether, or the Ether Spray.

TERMS, as low as any in the city, when low priced material and low priced work are used.

But for FIRST-CLASS OPERATIONS, with appliances and material to correspond, prices range higher.

S. WELCHENS, D. D. S.

## THOS. J. WENTZ,

SUCCESSOR TO

WENTZ BROTHERS,

SIGN OF THE BEE HIVE,

No. 5 EAST KING STREET, LANCASTER, PENN'A.,

DEALER IN

FOREIGN AND DOMESTIC DRY GOODS,

GLASS AND QUEENSWARE,

Carpets, Oil Cloths, Window Shades.

SPECIAL ATTENTION PAID TO

LADIES' DRESS GOODS

Shawls and Embroideries, Cloths and Cassimeres, Handkerchiefs, Gloves and Hosiery, Best Kid Gloves.

New Goods Received Daily!

The Choicest of the Market, and at the Lowest Possible Prices.

REMEMBER THE PLACE TO BUY.

THOS. J. WENTZ,

Bee Hive Store, No. 5 E. King St.

## C. J. GILLESPIE,

DEALER IN

FOREIGN AND AMERICAN WATCHES,

IN GOLD AND SILVER CASES,

CLOCKS OF EVERY DESCRIPTION,

Jewelry in all its Shapes and Forms,

SILVER WARE, designed for Bridal Presents

BRACKETS, TOILET SETS, VASES, SPECTACLES, GOLD PENS, &c., &c., &c.  
 No. 10½ West King Street, opposite the Cross Keys Hotel, LANCASTER, PA.

# HARDWARE!

## Stoves!

## Cedarware!

## Housekeepers' Furnishing Goods!

The undersigned at their old established stand in  
WEST KING STREET,

are constantly receiving fresh supplies to their extensive Stock, from the best manufactories in this Country and Europe, and invite the attention of Merchants and Consumers, feeling that we can do as well as any house in Philadelphia.

Persons commencing Housekeeping will find the

### The Largest and Best Selected Lot of STOVES,

at Manufacturers' Prices. Also, every other article kept in a first-class Hardware Store.

A FULL STOCK OF

Saddlers', Coachmakers' and Blacksmiths' Tools and Materials.

BUILDERS will find a full supply of every thing suited to their wants at LOWEST FIGURES.

CLOVER, TIMOTHY AND FLAX SEED,  
BOUGHT AND SOLD.

**STEINMAN & CO.**

P. E. GRUGER.

J. P. GRUGER.

GRUGER BROTHERS,

## MARBLE MASONS,

14 South Queen St., Lancaster, Pa.,

Have always on hand or will furnish to order at  
SHORT NOTICE,

### MONUMENTS,

TOMBES,

GRAVE STONES,

&c., &c.

We pay particular and personal attention both to the SELECTION OF THE MATERIAL and the EXECUTION OF OUR WORK, and our facilities now are such that we can guarantee our customers the very best work, at the same, and often Lower Prices, than are usually paid elsewhere for inferior productions.

Lettering

in

English

and

German,

ELEGANTLY AND CORRECTLY DONE.

We earnestly invite our country friends to give us a call.

# SHULTZ & BRO.,

Manufacturers, Wholesale and Retail Dealers in

HATS,

Caps and Furs,

LADIES' FANCY FURS

HOODS,

TRIMMED GLOVES AND MITTS,

Gents' Gloves, Capes and Collars

Fancy Robes,

BLANKETS, &C.

20 North Queen Street,

LANCASTER, PA.

## AMERICAN WATCHES



## H. Z. RHOADS & BRO.,

No. 23 West King Street,

late the Lamb Hotel,  
AND OPPOSITE COOPER'S HOTEL.

LANCASTER, PA.,

DEALERS IN

## AMERICAN & IMPORTED

WATCHES,

SILVERWARE,

JEWELRY,

CLOCKS AND SPECTACLES.



# LIFE INSURANCE AGENCY!!

THE UNDERSIGNED REPRESENTS THE

## BROOKLYN LIFE INSURANCE COMPANY,

AND ALSO THE

## NORTH AMERICAN

## Life and Accident Insurance Company,

Both stable and well established companies, the former having a capital of \$1000,000, and the latter \$500,000.

The plan of issuing policies by the Brooklyn Life Insurance Company presents a feature altogether unique, and one which removes one of the strongest objections, hitherto urged against the plan of Life Insurance; and this is what is termed the SURRENDER VALUE PLAN. Each and every Policy issued in the name of this Company bears an endorsement, stating the exact worth of the policy in CASH, at any time after two or more annual premiums have been paid.

Insurance can also be effected in the North American Life Insurance Company, and at lower rates, it is believed, than in any other Company in the United States.

All desirous of securing insurance upon their lives can do so by calling upon the undersigned.

### ALLEN GUTHRIE, Agt.,

East Lemon Street,

LANCASTER, PA.

## REED, M'GRANN & CO.,

### BANKERS.

### LANCASTER, PENN'A,

Dealers in United States Bonds and all kinds of Railroad Stock and State Loans.

Buy and Sell Gold, Silver, and United States Coupons.

Sell Bills of Exchange on Europe and Passage Certificates.

Receive Money on Deposit and pay Interest as follows:

1 month,	4 per cent.,	6 months,	5 per cent.
3 "	4½ "	12 "	5½ "

### FOR SALE AT

Chas. A. Heinrich's Drug Store, 13 E. King St., LANCASTER, PENNA.,

## German Cattle Powders!

The best Powder made for the Cure and Prevention of Diseases to which Oxen, Milk Cows, Sheep and Hogs, are subject.

For Stock Cattle preparing for market, a table spoonful in their feed once or twice a week, improves their condition by strengthening their digestive organs, and creates solid flesh and fat.

### GERMAN VEGETABLE OR UNRIVALLED CONDITION POWDERS

For preserving Horses in good health, removing all Diseases of the Skin, giving a Smooth and Glossy appearance, also a sure remedy for Distemper, Hidebound, Loss of Appetite, &c.

### PERSIAN INSECT POWDER.

A perfectly safe, quick and easily applied destroyer of Lice on Cattle, Fleas, Bedbugs, &c.

### PYROLIGNEOUS ACID.

A substitute for curing Beef, Pork, Hams, Tongues, Smoked Sausages, Fish, &c., without the danger and trouble of smoking, imparting a rich flavor and color.

## CHARLES T. COULD, CHAIR MANUFACTURER,

No. 37 North Queen St., Lancaster,

(NEXT DOOR TO SHOBER'S HOTEL.)

### Old Chairs Re-painted and Repaired.

## CHRISTIAN WIDMYER, CABINET MAKER,

S. E. Cor. East King & Duke Sts., Lancaster.

Cabinet Work of every description and a full assortment of Chairs constantly on hand.

☞ All Warranted as Represented. ☞

## JACOB ROTHARMEL,

PREMIUM

## BRUSH MANUFACTURER,

DEALER IN

## Combs and Fancy Articles,

No. 9½ North Queen Street, Lancaster, Pa.

## CRUGER & RICE, DRUGGISTS & APOTHECARIES,

No. 3 WEST KING STREET,

NEXT DOOR TO STEINMAN'S HARDWARE STORE,

Lancaster, Pa.

Have always on hand Pure, Reliable Drugs and Medicines, Chemicals, Spices, Perfumery and Toilet Articles. Also Flavoring Extracts of their own Manufacture, and of unsurpassed quality.

Sole Agents for HASSON'S COMPOUND SYRUP OF TAR, the best Cough Medicine in the market. We have also on hand in season an assortment of Landreth's Warranted Garden Seeds. The public can rely upon ALWAYS GETTING WHAT THEY ASK FOR AND NO SUBSTITUTES.

## GEO. F. ROTE, UNDERTAKER,

Corner South Queen and Vine Streets,  
LANCASTER, PA.

Coffins of all sizes always on hand, and furnished at Shortest Notice.

## J. B. KEVINSKI,

DEALER IN

## Pianos, Organs, and Melodeons,

### AND MUSICAL INSTRUMENTS GENERALLY,

A large assortment of Violins, Flutes, Guitars, Banjos, Tamborines, Accordions, Fifes, Harmonicas, and Musical Merchandise always on hand.

**SHEET MUSIC:** A large stock on hand and constantly receiving all the latest publications as soon as issued.

**MUSIC BY MAIL:** I would inform persons wishing Music, that Music and Musical Books will be sent by mail free of postage when the marked price is remitted.

**DECALCOMANIA,** or the art of Transferring Pictures. Can be transferred to any object. I would call especial attention of Coachmakers to my stock of Decalcomania.

# LANDIS & CO., KEYSTONE AGRICULTURAL WORKS

James Street, Lancaster, Pa.,  
ARE PREPARED TO DO ALL KINDS OF

## MACHINE WORK,

BUILD LARGE AND SMALL ENGINES,

SHAFTING, PULLEYS, HANGERS, HORSE & WATER-POWERS,  
MILL GEARING,

And all kind of Machine Work done at a first class Shop.

Having recently removed to their new building, and provided themselves with a

## LARGE ASSORTMENT OF MACHINERY

Adapted to the wants of their customers, they are prepared to execute all orders with neatness and dispatch, and on terms satisfactory to the customer. They would invite attention to their large foundry connected with their works, in which the best work is turned out.

They also announce that they are now prepared to supply their

## NEW GRAIN SEPARATOR

TO ALL CUSTOMERS.

This Machine requires LESS POWER, does MORE WORK, and is considerably CHEAPER than any other Separator now in the market. This Machine is now improved, well built, and does the best and most efficient class of work.

## Gas and Steam Fittings,

Made to order on a new set of STANDARD DIES.

Repairing of all kinds promptly done at reasonable rates.

Give us a call, and we will endeavor to please our patrons.

FRANK LANDIS,  
EZRA F. LANDIS,  
JACOB LANDIS.

# Diller & Groff's Hardware Store,

**SIGN OF THE ANVIL,**

No. 8 East King Street, Lancaster City, Penna.

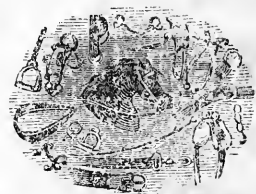
DEALERS IN

Foreign and Domestic Hardware,

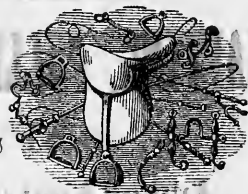
Such as Building Material, Paints, Varnishes, Oils, Glass, Coach Trimmings, Stoves,  
Iron and Steel, &c., &c., &c.

**HOUSE FURNISHING GOODS.**

TIMOTHY AND CLOVER SEEDS OF THE BEST QUALITY.



## AMOS MILEY'S HARNESS MANUFACTORY,



No. 37 North Queen St.,

NEXT DOOR TO SHOBER'S HOTEL, LANCASTER, PA.

### SADDLES AND BRIDLES,

PLAIN AND FANCY

### COACH, BUGGY & CART HARNESS,

WAGON GEARS, WHIPS, BUFFALO ROBES,

BLANKETS, TRUNKS, VALISES, CARPET BAGS, LADIES' & GENTS' SACHELS,

Of all kinds constantly kept on hand or made to order. Repairing neatly done.

Also, Agent for **BAKER'S HOOF LINIMENT**, the best article for Sore Hoofs in the country.

## J. M. WESTHAEFFER,

### BOOKS, STATIONERY, FANCY GOODS, &c., &c.,

44, Corner North Queen and Orange Streets,

LANCASTER, PA.

N. B.—Any Book ordered can be sent by mail to any address.

# TO BUILDERS.

## PLASTIC SLATE!!

### The Greatest Roofing Material of the Age!

IS NOW OFFERED TO THE PEOPLE OF

LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

WITH A PROMISE OF THE FOLLOWING ADVANTAGES:

It is superior to other coverings for all kinds of buildings for these reasons:

1. It is water, snow and air-proof from the beginning, and is as fire-proof as ordinary slate. (See testimony New York Fire Insurance Companies.)
2. It keeps buildings warmer in winter and does not make them hot in summer as ordinary slate does, and it can be, after the first year, whitewashed or painted any desired color so as to obviate all difficulty arising from its dark color.
3. Being entirely water and fire-proof, it is invaluable as a covering for the sides of buildings and lining cisterns of whatever material they may be built; stopping water out of cellars and dampness out of walls of houses, and closing leaks between buildings.
4. Adhering, as it does, with great firmness to tin and iron, it is useful for covering tin roofs and iron exposed to dampness or to the atmosphere, such as iron fences, cemetery-railings, &c.
5. Buildings covered with PLASTIC SLATE do not need tin spouts at the eaves nor do the valleys need tin to make them water proof.
6. It is lighter than shingles, and is equally adapted to flat or steep roofs.
7. The testimony of Wm. McGilvray & Co., published herewith, shows that it is not only fire-proof externally, but, is also a great hindrance to the spread of fire within.
8. It is much cheaper in first-cost than any good roofing now in use, and when all attendant expenses of the two roofs are estimated, costs only about half as much as the best slate, and it makes a better and closer roof.
9. For the roofing of foundries and casting-houses of blast furnaces, where there are gases of a very high temperature, which injures and destroys other roofs, this material is improved and seems to produce a better roof, (see certificates of Messrs. Grubb, Musselman & Watts, S. M. Brua and Wm. McGilvray.)
10. If in process of years cracks or leaks occur in Plastic Slate Roofs, they are about as easily repaired, as they would be to white-wash, needing only a brush and the Mastic, but no expensive labor of mechanics.

The Pamphlet referred to in the foregoing notice can be had gratuitously, by calling at the Office of the Lancaster Inquirer or Examiner & Herald.

Persons wishing to examine PLASTIC SLATE ROOFS, and thus verify for themselves the following statements, are invited to call and inspect Roofs put on for the following persons, among many others:

LANCASTER—Thos. H. Burrowes, Stuart A. Wylie, (Editor Lancaster Inquirer,) J. B. Schwartzwelder, Abraham Bitner Sr. MARIETTA—Henry Musselman & Sons., Myers and Benson. COLUMBIA—C. B. Grubb, (Furnace,) Columbia Gas Co., Samuel Shock, Pres't., Susquehanna Iron Company, Wm. Patton, Pres't., Samuel W. Mifflin. MOUNT JOY—Henry Kurtz, Dr. J. L. Ziegler, William Brady, J. R. Hoffer, (Editor Mt. Joy Herald). CHRISTIANA—E. G. Boomell, Wm. P. Brinton, John G. Fogle. BART—William Whitson. BELLEMONTE P. O.—Robert P. McIlvaine. PARADISE—Robert S. McIlvaine, WILLIAMSTOWN—T. Scott Woods. EPHRATA—Dr. I. M. Groff. GORDONVILLE—Samuel M. Brua. CERNARVON TWP.—Mrs. Fanny Mast. UPPER LEACOCK TWP.—Marks G. Menger, Christian R. Landis, Jacob R. Musser. LEACOCK TWP.—Isaac Blair, Levi Zook. WEST EARL—Christian Beller. LEAMAN PLACE—Henry Leaman, Israel Rohrer. BRUNNERSVILLE—Aaron H. Brubaker. SPORTING HILL—Emanuel Long. LITIZ—H. H. Tshudy, David Bricker. DURLACH P. O., CLAY TWP.—Jonas Laber. MANHEIM BOR.—Nathan Werley, Samuel Ruhl. PENN TWP.—George Ruhl. WEST LAMPETER—Aldus C. Herr. ENTERPRISE P. O., EAST LAMPETER—Mark P. Cooper. STRASBURG BOR.—Hervy Brackbill.

Orders for Roofing Should be sent to

**Joseph Gibbons,**

LICENSEE FOR LANCASTER AND YORK COUNTIES, PA., AND CECIL COUNTY, MD.,

Enterprise P. O., Lancaster County, Pa.

A. W. & J. B. RUSSELL, Lancaster, Pa.

Or MOSES LIGHT, Manheim, Lancaster county, Pa.

Or JOHN R. BRICKER, Litiz, Lancaster county, Pa.

ALDUS C. HERR, Lampeter, Lancaster county, Pa.

# WEEK'S WHEAT, (WHITE.)

## Early Ripening, Hardy and very Productive!

We offer prime seed of this very early White Wheat, which we consider the most valuable variety of recent introduction, combining the hardiness and early maturity of the Mediterranean, with the high flouring quality of the best White Wheats. Its straw is stiff, protecting it against the Fly, and it succeeds well in land of moderate fertility, yielding from 25 to 45 bushels, according to soil and season.

Prices; 1 bushel, (Sack included),	-	-	-	-	\$ 4.00,
" 2 " " " " " " " " " "	-	-	-	-	7.50,
" 10 " " " " " " " " " "	-	-	-	-	36.00.

We also offer a fine supply of FRENCH RED and WHITE CHAFFS, EXTRA EARLY JERSEY, ROCHESTER RED CHAFF, LANCASTER RED CHAFF, by the bushel and sack, and a number of other varieties in limited quantity.

Descriptive Priced Circular mailed free to applicants.

### Edward J. Evans & Co.,

Nurserymen and Seedsmen,

YORK, PA.

# THE GREAT AMERICAN COMBINATION

## Button Hole, Overseaming

AND

# SEWING MACHINE!

Is warranted to execute in the best manner, every variety of

SEWING, HEMMING, FELLING, CORDING, TUCKING, BRAIDING, GATHERING, QUILTING, OVERSEAMING, EMBROIDERING ON THE EDGE,

And in addition makes beautiful Button and Eyelet Holes in all fabrics, being absolutely the best FAMILY MACHINE in the world, and intrinsically the Cheapest, for it is two Machines combined in one by a simple and beautiful Mechanical Arrangement. This is, in fact, the only new machine in the market that embodies any substantial improvement upon the many old machines that are being forced upon the public.

Circulars with full particulars and samples of work done on this Machine, can be had on application at the

Sales Rooms of the Company,

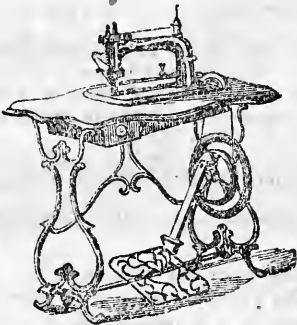
S. W. Cor. 11th and Chestnut Sts., PHILADELPHIA.

Instructions given on the Machine gratuitously to purchasers.

AGENTS WANTED TO SELL THIS MACHINE.

aug '69-ly

IT HAS NO EQUAL



### A. B. KAUFMAN'S

## INSURANCE AGENCY,

No. 1 EAST ORANGE ST.,

LANCASTER CITY, PA.,

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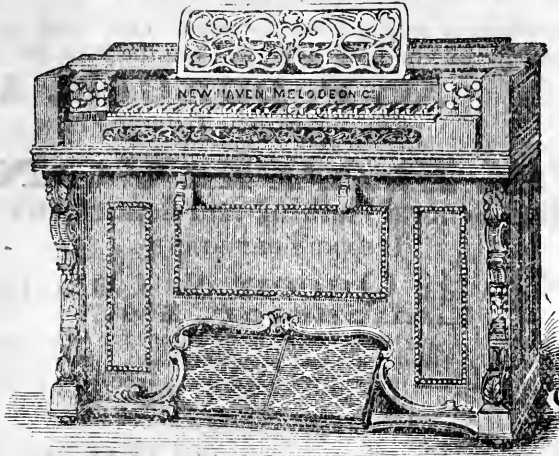
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TRADE MARK.

And further, in order to protect the same, we hereby announce our determination to *prosecute to the fullest extent of the Act of Assembly, approved, 31st day of March, 1860*, any person or persons who shall violate the provisions of said act as applicable to our trade mark.

N. B.—We respectfully request the public, when they have occasion or desire to use Old Brandy at the Hotels or Restaurants to ask particularly for Reigart's Old Brandy.

Very respectfully, &c.,

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